Regional variation of Early Archaic Greek Doric Temples in the Peloponnese.

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REGIONAL VARIATIONS OF EARLY ARCHAIC GREEK DORIC TEMPLES IN THE PELOPONNESE, *C.* 675-550 BC.

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ABSTRACT

The purpose of the dissertation was to determine if regional styles existed for ancient Greek religious architecture during the period *c.* 675-550 BC. The methodology was the same as for determining local styles of pottery and sculpture; all aspects of the temples were first compared within a particular area to detect similarities. When features appeared on almost every temple in a particular area, they could be considered to form a standard for design and construction. These common characteristics were then compared to those from other areas to determine if they were distinct from one another. The results of the research have shown that there definitely were local architectural styles within the Peloponnese. A regional style can be detected for Corinthia, Arcadia, Laconia, Eleia, and the Argolid. Messenia and Achaia had few remains; their architectural character was, in fact, related to those of neighbouring regions.

The theories on the origin of the Doric order are also discussed as is the evidence from the Peloponnese. The Peloponnese was particularly important as it was the traditional birthplace of the Doric order. The northeast Peloponnese was also the location of many architectural innovations in this period.

The majority of this thesis consists of seven chapters each representing a separate region in the Peloponnese: Corinthia, the Argolid, Arcadia, Laconia, Messenia, Eleia, and Achaia. Within each chapter, there is a synopsis of each site that had Early Archaic temple remains and an analysis of those remains in that area to determine if their temples shared characteristics. Chapter eight summarises and compares the findings and discusses the general implications of them. The following chapter discusses the origin of the Doric order. A gazetteer for the Early Archaic temples is provided at the back listing relevant bibliography.

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INTRODUCTION

The beginning of the Early Archaic period of architecture was marked by an increase in scale of cult buildings and by technical and design innovations. These changes in religious architecture occurred in the early seventh century BC. Previous to the seventh century, religious and domestic architecture were of similar size and plan; the nature of their finds was the main identifier as to their function. By the Early Archaic period, domestic and religious structures could be distinguished in terms of both scale and design. Moreover, cult buildings were no longer intermingled with houses. Specific areas were set aside for worship that were defined by walls or markers to indicate the boundaries of the temenos, the sacred precinct. The change in the function of the cult building also distinguishes the temples from the two periods. The temple in the Geometric period housed the ritual meal sometimes with a hearth or altar to facilitate the sacrifice. In the Early Archaic period, the hearth temples were no longer built; instead the role of the temple was to house the image of the god and its offerings.

The end of the Early Archaic period and the beginning of the Late Archaic period of architecture, around the middle of the sixth century BC, was characterised by the widespread use and standardisation of technology and design features invented in the Early Archaic period. Features which had only appeared on a few buildings, since they were innovative, were now standard in the latter half of the sixth century. For example, before *c.* 550 BC only two temples in the Peloponnese had walls built to their full height with ashlar blocks; these were the first in the Greek world and were built over a century before it became common. Typical wall construction in the Early Archaic period was of a rubble socle surmounted by mud-brick. Only in a few temples was the technique of worked squared masonry even applied but then only for socles. In the Late Archaic period, the stone Doric order was used for virtually every temple throughout the Mainland and Magna Graecia. In contrast, most temples of the Early Archaic period had wooden columns which may or may not have been of the Doric order. The few stone Doric columns which survived from the Early Archaic period were very diverse in their proportions,

profile of the capital, and decoration. The Late Archaic period standardised all of those features.

The temple from the Early Archaic period onwards was quite literally 'the house of the god' who was represented by a cult statue in its likeness. In early temples, those of the Geometric period, hearths and benches were quite common. The temple may then have originated as a "hearth-house" serving as a gathering place for the preparation and consumption of the ritual meal after sacrifice.[1] In the late eighth or early seventh century, the ritual meal and the hearth were moved outside or to another building. Hearths and benches were no longer incorporated into the plan. The function of the temple was then to house the cult statue and votive gifts. Perhaps even the temple was a gift to the god.

Many of the Early Archaic temples were similar in plan to their Geometric predecessors but on a larger scale. On the Mainland, the Geometric temples were unattached rectangular, oval or apsidal structures.[2] They were constructed either of wattle and daub or mud-brick on rubble socles; some had hearths and benches. Examples of Geometric cult buildings in the Peloponnese include the shrine near the 'House of the Oil Merchant' at Mycenae; the temples of Hera Limenia and Hera Akraia at Perachora; the temple of Hera at Solygeia; the temple 'A' at Pallantion; and the apsidal temple at Asine.

The most typical Early Archaic temple was a small, rectangular structure with an entrance on one of the short sides. They were fairly small, about the same size as their Geometric predecessors, having a pronaos and naos. Likewise, they were built of rubble socles and mud-brick walls. Unlike their predecessors, they had terracotta tiled roofs. Their plans were presumably developed from the Geometric long, narrow, symmetrical porch buildings rather than the Mycenaean megaron which also had a porch but the inner room was roughly square with a hearth in the centre surrounded by four columns. The porch was regularly used in Dark Age buildings, such as at Lefkandi, which may have been a survival from the Mycenaean period.

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[1]Drerup (1969) 123-128. Examples include temples of Hera Limenia at Perachora, a small building from Lefkandi, and temples at Prinias and Dreros.
[2]Drerup (1969) 5-31.

The other type of Early Archaic temple was monumental with dressed stone walls or socles and wooden peristyles. Only a small percentage of temples were peripteral in the seventh century.[3] These temples were of a much larger scale than their contemporaries, their cellae measuring roughly one hundred Greek feet in length (*c.* 30 m). These temples were the so-called 'Hekatompedons'. Plans consisted of a peristyle, pronaos, naos, internal colonnades, and sometimes an adyton or opisthodomos. The peristyle represented basically a continuation of the prostyle porch around all sides of the cella. Since the columns were of wood, it is not known whether or not they were of the Doric order. The walls had stone socles whose ends were usually terminated with antae; the upper parts were still made of mud-brick except in Corinthia where the walls were constructed to their full height of ashlar blocks. These peripteral temples were expensive endeavours since skilled labour and quarried stone would be required whereas the smaller, non-peripteral temples only needed local materials and a relatively few skilled labourers.

The seventh century peripteral temples clearly were the immediate predecessors of the first stone Doric temples built just after 600 BC. All possible elements of plans and construction techniques which appeared in the earliest stone Doric temples had already been established: continuous stylobates, peristyles, antae, internal colonnades, pronaoi, adyta, opisthodomoi, orthostates, ashlar masonry, deep foundations, and terracotta tiled roofs. The first stone Doric temples were not innovative in plan, scale, or technology. The use of the stone Doric order spread fast once it first appeared in the early sixth century.

THE STUDY OF REGIONAL STYLES

The study of architecture is usually approached quite differently from those of other Greek arts. Pottery and sculpture are classified typologically by style, date, and region. Since regional styles existed for these arts, it is not unreasonable that they may have existed for architecture. Few studies have been done about regional differences in Greek architecture for any period. In most cases, they are

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[3]Examples were at Isthmia, Argive Heraion, possibly Tegea and Corinth, Thermon C, and Eretria. Peristyles may have existed earlier at the first and second Heraions at Samos, Megaron B at Thermon, the Heroon at Lefkandi, Ephesos, and Smyrna.

more general, for example studies have been done on the differences between Doric temples of Magna Graecia and the Greek Mainland. The Attic Ionic style has also been pinpointed and discussed at great length, but few other periods and groups of buildings have been looked at to see if there were local styles.

To determine if regional systems existed, one must first establish if temples within an area had the same characteristics. If they do, then the characteristics must be compared to those of other areas. When certain features are consistent in one area but absent in another, then they can be considered part of a local style.

SCOPE AND FORMAT

This work had to be limited in order thoroughly to examine the evidence. The Peloponnese was chosen as the subject for this study for several reasons. First of all, it was almost entirely cut off from the rest of the Mainland by water except for the Isthmus of Corinth (*figure 1*). Access to the Peloponnese therefore had to be by way of sea or the Isthmus indicating that it could have been fairly isolated which would encourage the flourishing of local styles. As for the regions within the Peloponnese, most are delineated by topography. The mountain ranges acted not only as boundaries but natural defences. Unfortunately, there are a few sites which lie in areas where borders were not defined clearly, so the region to which they belonged can only be hypothesised. If regional styles existed in Greece, the Peloponnese would be one area that would be conducive to it since the mountain ranges would in effect isolate regions. The Peloponnese was also chosen for its richness of sites. Furthermore, the Peloponnese, particularly Corinthia and the Argolid, was where certain innovations appear to have taken place including the invention of the terracotta tile, ashlar masonry, and the Doric order. Therefore this part of Greece would be a natural place to see how the innovations, particularly of the Doric order, developed and if differences existed in the nearby areas.

A chronological limit was needed as there were simply too many Archaic sites within the Peloponnese to be discussed in this study. Accordingly the study has been limited to the earlier part of the Archaic period from the early seventh century to the mid sixth century. Although the dates 675-550 BC are used generally to describe the Early Archaic period, the later date is somewhat flexible as the

beginning of the Late Archaic period varies either side of the mid sixth century from area to area. The transitional indicator between the two periods was taken to be the time when the stone Doric order was standardised and when the stone Doric peripteral temples became the most common type of cult building constructed throughout Greece.

There are a number of Archaic sanctuaries in the Peloponnese that will not be discussed here, since this study will be limited to those with remains that were most likely temples. Where sites with Archaic remains are not included in the analysis, it is either because architecture was not actually recovered or there is substantial doubt as to their date. Some architectural features, which would probably have been common to all substantial buildings, such as terracotta roofs, decoration, and Doric elements, will be considered in order to help establish regional styles even if the fragments were found at sites without a known temple. Temples were chosen as a building type to study as they are usually the best preserved and best published structures, other than stoas, in this early period.

When stratigraphic context is not known, dating of buildings and architectural fragments must be based on other factors. The most common method of dating an object is that of its style. This is based on the principal assumption that style changes gradually and continuously, and therefore differences in form should have chronological significance. In order to date an unknown object it must be compared to a dated parallel; similarity in form between the two should mean that there is a similarity in date. When an object is not similar enough to a dated object then it is interjected between two dated parallels; based on whether its style is closer to one dated parallel, the date of the unknown object is then estimated. The problem with this dating technique is that style does not always develop evenly and ceaselessly; it changes in steps. Coulton's analysis of Doric capital profiles shows that changes in proportions may not necessarily reflect a gradual development but one with a few significant phases.[4] In other words, a precise date cannot be pinpointed based on slight variances in proportions of capitals within a period. In addition, changes in style are not always detectable when examining only an architectural fragment of a building, the remainder of which is lost. Since the

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[4]Coulton (1979) 81-153.

construction of temples was not immediate, the style of elements may reflect either the early or late stages of the building's construction which might prejudice the determination of the starting or finishing date of the construction. Therefore a date based upon a few architectural fragments may not always be entirely accurate for determining when a temple was erected. Instead the parameters set for dates of styles should be those identifiable points in time when a design had clearly altered or was no longer used. The problem is that in this early period, it is not always easy or possible to date innovations or changes as this was a period of experiment rather than one of consolidation and refinement.

Almost all material used here has been published, except where special permission was given to include unpublished pieces. Every attempt was made to see the material remains in person. Many excavators and institutes were very helpful, and access to their material was granted. A portion of finds in museums was inaccessible either because permission to see it was denied or the material was unable to be located. As for the sites, every attempt to visit them was made and almost all sites were studied first-hand. Unfortunately, a few of the sites had been either covered over after excavations or natural growth had obscured the temple remains making it difficult, if not impossible, to review the material in situ.

MODERN SCHOLARSHIP

Relatively few scholars have touched on the subject of regional architectureal styles in the Archaic period. The majority of studies have concentrated on a single region and on Late Archaic buildings as they are better preserved and of the Doric order in stone. Among the authors who have discussed Late Geometric and Early Archaic architecture are Rhodes (1987a) and (1984), Mallwitz (1981), Kalpaxis (1976), Drerup (1969), and Weickert (1929).

For each site, the excavation reports and all subsequent publications were consulted. As for each region, studies have varied widely. In Corinthia almost all articles are by members of the American School of Classical Studies at Athens who have thoroughly studied the material of the Early Archaic temples at Corinth and Isthmia. In the Argolid, Foley (1988) has catalogued sanctuaries in use from 800 to 600 BC, but no comparative study was done. Arcadia has recently received more

attention from scholars [Østby (1991) and (1986), Jost (1985), and Voyatzis(1990)]. The British excavations in and around Sparta for the past century have dominated activity in Laconia. In particular, H.W. Catling's work for the past twenty years has greatly increased the understanding of Laconian architecture. His work is used in Tomlinson's (1992) and Stibbe's (1989) recent synopses on Spartan cult buildings. A survey of Messenia briefly mentions a few of the Archaic temple sites. The temples in Eleia and Achaia were excavated and subsequently published by the Germans and Austrians. Bibliography for each site is listed in the gazetteer.

One aspect of temple architecture which has been studied in terms of regional styles is the evidence for systems of roof tiles and revetment. Most recent is the valuable book by N.A. Winter (1993) outlining the regional styles of roofs; many of her conclusions concur with my own. The conference on Archaic roofs published in *Hesperia* 1990 is essential to this study. Other works about architectural terracottas either from sites or museums [Hübner (1978), LeRoy (1967), Kjellberg (1940), and Buschor(1933)] or of a particular type [N.K. Cooper (1989), Goldberg (1982), Akerström (1966), Van Buren (1926), and Koch (1915)] are considered standard and their dates are used for comparison.

Other specific studies from the Archaic period include those of architectural sculpture by Bookidis (1967) and geison blocks by Klein (1991), which primarily concentrated on Late Archaic buildings as that was the period from which most of the material survived. A comprehensive study of early Doric capitals was done by Wesenberg (1971).

CHAPTER ONE: CORINTHIA

The Early Archaic temples of Corinthia are among the best known and earliest buildings of this period. These temples are currently being studied by members of the American School of Classical Studies at Athens. Access to the material in storerooms was therefore quite limited; instead I had to rely on published reports and personal inspection of the sites.

REMAINS AT SITES

CORINTH

There were several Archaic sanctuaries in and around ancient Corinth (*figure 2*). Several sanctuaries, such as Demeter and Kore on Acrocorinth,[5] were active in the Early Archaic period, but temples have not been identified in the remains. At the Asklepieion near the Fountain of Lerna, a shrine may have been constructed in the Early Archaic period for the worship of Apollo.[6] Only the cuttings in the bedrock for walls and a wide entrance survived, being somewhat obscured by cuttings for a fourth century BC temple (*figure 4*). Within the wall cuttings were further cuttings probably for a baldachino, an altar, a sacrificial table, a drain, and a settling basin. Instead of a roofed temple, this structure may have been an open-air altar complex. The date of its construction cannot be determined as the area was cleared of debris before the later temple was built thus removing all relevant material.

There are two Early Archaic temples within the city of Corinth: one on Acrocorinth and the other on Temple Hill.

THE APHRODITE TEMPLE ON ACROCORINTH

Atop Acrocorinth was a sanctuary of Aphrodite whose earliest remains were portions of two walls possibly from its first temple.[7] Only the southeast corner of

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[5]At the sanctuary of Demeter and Kore on the slope of Acrocorinth, the earliest temple remains date to the fourth century although there are sixth century structures in the sanctuary.
[6]C. Roebuck (1951) 9-15, 152, fig. 3, pl. 2; DeWaele (1933) 420-423, 449, fig. 1, pls. 48-49.
[7]Williams (1986) 12-24; Blegen (1930) 3-4, pl. 1.

the temple was preserved. It had a rubble socle 0.70 m thick set onto the bedrock. A three-peaked antefix (*Corinth Museum FA 547*) with a stamped palmette finial similar to those in the Argolid was found on Acrocorinth which could possibly have belonged to this temple.[8] No other remains were preserved so its plan or other details cannot be determined. It can be dated to the seventh century judging by the Protocorinthian pottery from deposits around the walls and the style of the antefix.

THE PROTOCORINTHIAN TEMPLE OF APOLLO[9]

Material from a temple that predates the extant Late Archaic temple of Apollo, *c.* 540 BC, was found around and below Temple Hill filling a roadway to the north. The remains belonged to an Early Archaic temple which stood from *c.* 680 to 570-60 BC when it was destroyed by fire. Only wall blocks, mud-brick, and terracotta roof tiles have survived. Since nothing was found in situ, the plan of the temple can only be the subject of speculation.

Cuttings have been observed in the beddings of the Late Archaic temple that may have belonged to the earlier temple which would show it was of approximately the same size and orientation (*figure 3 and plate 1*). One cutting, which was located along the north edge of the south cella wall of the Late Archaic temple, was roughly finished, had a preserved width of 0.70 m, and can be traced the entire length of the cella. There is some doubt as to whether this and other cuttings belonged to the earlier temple as they may instead have been overcuttings by the Late Archaic masons.[10] On the other hand, these cuttings had a dissimilar tooled surface and were on a different axis from the known Late Archaic cuttings. If these cuttings were from the Early Archaic temple, its dimensions were approximately 10.90 x 33.20 m (*figure 3a*).[11]

All of the blocks found in the excavations were for the walls as none for the stylobate have yet been identified. The fragmentary wall blocks were of a fine-grained buff poros limestone that was roughly finished and showed traces of

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[8]Winter (1993) 163, fig. 19 dated it to the early sixth century; M. Roebuck (1990) 53-54, pl. 5; Williams (1980) 348-349, pl. 155 dated it to the mid seventh century.
[9]Williams (1984) 67-75, fig. 1; id. (1980) 345-350, pl. 154a; Robinson (1976a) 210-217, 224-235, figs. 7-9, pls. 50-52; id. (1976b) 244-250, figs. 7-11; M. Roebuck (1955) 147-157.
[10]Robinson (1976a) 224.
[11]M. Roebuck (1955) 154, pl. 61e.

burning.[12] Two types of blocks existed, both of which had parallel V-shaped lifting grooves on their undersides and occasionally up one of the ends for ropes. The majority were rectangular ashlar blocks; the others had cuttings across their tops for timbers (similar to those in *figures 5c-d*). One side of the cutting was straight; the other side of the cutting was at an oblique angle to the face and had a notch or dovetail cutting.[13] These blocks were probably for the crowning course of the walls. Some blocks were for a cornice since their upper surface was sloped.[14] Nails were used to secure wooden roofworks to the blocks from the cornice and the crowning course.[15] Charred wood, much of it probably from the ceiling and roof, was found on the Archaic roadway.[16] Also among the destruction debris of the temple and roadway wall was mud-brick. If the quantities of this were small, it could perhaps have belonged to the roadway wall rather than the temple.[17]

The walls of the temple were covered with white plaster upon which were painted designs similar to those on pottery and early representations of architectural ornament, such as egg-and-dart.[18] Flakes of white and coloured plaster were found in the debris as well as on the surface of blocks. On a few wall blocks, an inscription of a religious calendar, dated to the first half of the sixth century BC, had been carved up to a century after the temple had been erected.[19] One of these blocks was from the corner of the temple as the inscription was found on adjacent sides. Another of the inscribed blocks was adjacent to a wood-framed door or window opening as indicated by its cuttings.

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[12]Rhodes (1984) 97-102; Robinson (1976a) 224-227, fig. 7; id. (1976b) 246-247, pl. 51; M. Roebuck (1955) 154-155. The blocks were approximately 0.24 m high x 0.78 m long x 0.62 m wide.
[13]Robinson (1976a) 227; M. Roebuck (1955) 155, pl. 62c-d.
[14]*Corinth Museum A727 and A218*. One of the blocks had a slope of nine and a half degrees while another had one of five degrees; the ends of the temples may have had a different slope. Robinson (1976b) 246-247, fig. 7.
[15]Robinson (1976a) 277; M. Roebuck (1955) 155, pl. 61c.
[16]M. Roebuck (1955) 149.
[17]Although Roebuck (1955) 156 states that "large quantities" were found, Robinson (1976a) 227 describes the amount of mud-brick found as "relatively small".
[18]Robinson (1976a) 228-230, fig. 8; pl. 51b-e; id. (1976b) 248-249, fig. 10; M. Roebuck (1955) 155, pl. 61d.
[19]Robinson (1976a) 230-231, pl. 52d-e; id. (1976b) 249-250.

The roof was covered by terracotta tiles which combined a concave pan and a convex cover into a single tile (*figures 10a-b*).[20] These tiles were very large measuring 0.67 m x 0.67 m and weighing 29.5 kg each. Both left-handed and right-handed varieties exist as well as a few single cover tiles. The left-handed tiles were probably laid on the left side of the roof and the right-handed tiles on the right; in the centre where the pans of both varieties met, a single cover was laid. Nail holes can be seen on the single tiles for securing them to the roof. Tiles for the eaves and the ridge were also made up of combination tiles. The most significant find was the hip tiles indicating that at least one end of the roof had a hip rather than a pediment (*figure 10d*).[21] Only two corner eaves hip tiles were recovered so there was no evidence for more than one hipped end. All of the tiles had cuttings so as to fit them securely together. The covers had a notch cut into their upper, inner corners, and their upper, outer corners were cut off diagonally as were the lower outer corners of the pans (*figure 10a*). No decorative elements, such as antefixes and acroteria, have been found for this roof, and they probably never existed. The majority of tiles were left the yellow colour of the fabric, but a few were covered with a black wash. These two varieties were possibly combined to form a pattern or the black tiles were used solely on one side.

The temple's construction is dated by a deposit of working chips from the wall blocks that contained Late Geometric and Early Protocorinthian sherds, the latest of which date to around 680 BC.[22] The temple was destroyed by fire as indicated by traces of burning on the wall blocks and roof tiles. The destruction debris from the temple can be dated by pottery to the mid sixth century BC.[23]

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[20]*Corinth Museum*. M. Roebuck (1990) 47-49, pl. 5; Robinson (1984) 55-66, figs. 1-6, pls. 14-15; Williams (1980) 346-347; Robinson (1976a) 231-234, fig. 9, pl. 52c; Robinson (1976b) 247, figs. 8-9; M. Roebuck (1955) 156-157, pl. 62f-g.

[21]Rhodes (1984) 89-90 and (1987a) 477 thinks that the roofs at Corinth and Isthmia were "Chinese-type" based on a hip tile from Corinth with a horizontal bottom. Hemans (1989) 262 n.35 convincingly argues against a Chinese-style roof for either temple as there was absolutely no proof for one.

[22]Robinson (1984) 57; id. (1976a) 211-212, 234-235, pl. 54c; id. (1976b) 246, fig. 6.

[23]Robinson (1976a) 216-217; M. Roebuck (1955) 149-153.

ISTHMIA

The sanctuary of Poseidon was one of four sites where the Panhellenic games were held. The worship of Poseidon was established by the eighth century at a site occupied from the Mycenaean period. The Early Archaic temple of Poseidon lies directly beneath the later Classical temple; their eastward orientations vary only by a few degrees.

EARLY ARCHAIC TEMPLE[24]

The Early Archaic temple was constructed in the first half of the seventh century and destroyed around 470 BC by fire. The temple stood on bedrock that had been levelled before its construction.

The temple's foundations have been traced by cuttings in the rock and earth, by changes in earth colour where the foundation blocks have been removed, and by a few stones still in situ (*figure 3b and plate 2*). Trenches for the colonnade foundations, *c.* 0.96 m wide, are still visible along the north, west, and east sides. The stylobate had only one step. At the east end there was an additional step as shown by its trench and a block in situ from the step at the southeast corner.

The Archaic temple's earth floor was partly preserved within the Classical temple's cella and was 0.40 m below it. At the east end of the temple, the Archaic floor level was indicated by the marble circular base of a perirrhanterion and by iron feet of a tripod. Three floor levels were detectable during the life-span of the Archaic temple. The first was of fine yellow earth; Middle Protocorinthian sherds provided a terminus post quem for it to the first half of the seventh century. The second floor was of reddish-brown earth with the latest pottery belonging to the first half of the sixth century. The third floor was of red soil mixed with marl; the latest sherds dated to the second half of the sixth century.

An unusual feature of the temple was the existence of five rows of circular cuttings. Some appear to have been for anchoring wooden posts of scaffolding.[25] The circular holes were cut before the first floor level was laid since one was found

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[24]Gebhard and Hemans (1992) 23-40, figs. 5-10, pls. 11-14; Hemans (1991) 301-302; Rhodes (1987a) 477; Rhodes (1984) 43-98, figs. 23-24; Broneer (1976) 42-46, figs. 3-4; id. (1971) 3-56, pls. 3-4, A-C; id. (1961) 250-258; id. (1959) 300-303; id. (1955a) 111-112, 118-119, pls. 42a, 43a, 50c.
[25]Broneer (1971) 7-8.

beneath the remains of the iron tripod, but that does not preclude them from being used in the temple's construction. One row of cuttings was unlike all the others in its spacing and the diameter of its holes, being *c.* 0.30-35 m. This row lay in the cella and was believed to be for a central row of wooden columns. Most of the columns were 4.52 m apart except between the fifth and sixth columns from the west which were 5.05 m apart. The difference of 0.53 m was around the width of some of the wall blocks suggesting that a wall divided the interior into a naos and a pronaos at that point. Hemans has proposed that there were two doorways, one on either side of the colonnade.[26]

Although some maintain that the temple was non-peripteral,[27] trenches for peristyle foundations existed. Furthermore, among the finds were blocks for the stylobate since they were dressed on the tops and only on one face. The stylobate blocks were almost square with rope grooves underneath. The tops were badly weathered and had traces of burning. Some of the burning marks were circular with less burning inside the circle beneath the columns. The blocks had other signs that columns once stood on them in the form of scratch marks for the axis of columns, the outline of flutes in stucco dripped from the shafts, and circular scratches with a diameter of 0.77 m corresponding to a stone drum with the same diameter.

Trenches for the cella walls along the north, south, and west sides have been found. Evidence for antae survived at the northwest corner of the wall. Along the south wall a series of pits at intervals of 2.26 m from centre to centre were for piers. The pits measured 1.00-15 m long x 0.55-65 m wide. The interior columns were correspondingly spaced at intervals of c. 4.52 m, twice that of the piers.

Ashlar blocks of a fine-grained white poros for the wall were recovered in the excavations (*figures 5a-f*).[28] The blocks had rope channels but no traces of dowels, clamp cuttings, or pry holes. A few blocks had edge anathyrosis. There

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[26]Gebhard and Hemans (1992) 31, fig. 8.
[27]Rhodes (1987a) 477.
[28]Rhodes (1984) 65-71, figs. 23-24; Broneer (1971) 12-33, figs. 1-52, pl. 10b-d, 11a-b; Broneer (1958) 3. Broneer put all blocks found at the site into eleven categories: seven of which were for walls. The dimensions of the blocks varied from 0.50-83 m wide x 0.51-87 m long x 0.24-8 m high.

were basically two types of wall blocks, the majority of which were rectangular (*figures 5a-b*). The others had cuttings along the tops for timbers (*figures 5c-d*). One side of these cuttings usually has a straight edge; the other side has a diagonal edge with a sharp jog. These blocks belong to a top course of a wall. A few blocks which were for the cornice had a protruding portion whose top was cut at an angle of about thirteen to fourteen degrees (*figure 5g*); this would have been the estimated slope of the roof.[29] Although a small quantity of mud-brick was found in the destruction debris, the walls at Isthmia seem to have been built completely of stone from stylobate to eaves.[30] The mud-brick may have been used as filler in the entablature above the colonnades.[31]

The wall blocks were crumbly as a result of the fire and the subsequent chemical reaction to the heat. Although most wall faces were badly burned, traces of white plaster and paint were still retained. Some faces of the wall blocks had an undamaged band, *c.* 0.34-37 m wide, adjacent to crumbled surfaces (*figures 5b and 5d*). The undamaged vertical, and sometimes horizontal, bands must have been covered by some material, most likely wood, the purpose of which was probably to frame rectangular panels of paintings. Numerous painted plaster chips were found, but as they are small, the subject of the painted panels cannot be ascertained. Furthermore, the small fragments cannot be used to date the temple since no other wall paintings have been preserved from this period with which to compare them.

Roof tiles were almost exactly like those from the Early Archaic roof at Corinth.[32] Combined tiles of both left- and right-handed varieties as well as for the ridge, eaves, and hip survived (*figures 10a-e, 11 and plate 3*). The eaves tiles had peaked covers with triangular projections in the centre of the lower edge of the pans (*figures 10c and 11*). The tiles had cuttings and notches for securing them to one another (*figures 10a and 10d*); nails were also used to secure the ridge tiles. Although Hemans restores the roof with hips at both ends, there was no evidence for it.[33] The roof was not decorated with a sima, antefixes, nor acroteria.

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[29]Broneer (1971) 30-31, figs. 41-42.
[30]Gebhard and Hemans (1992) 38.
[31]Broneer (1971) 55.
[32]Their dimensions were 0.65 m x 0.68 m. Hemans (1989) 251-266, figs. 1-3; Robinson (1984) 55-62, figs. 1-6; Rostoker and Gebhard (1981) 211-227; Broneer (1971) 40-53, figs. 59-64, pls. 13a-d.
[33]Gebhard and Hemans (1992) 31 n.84.

Temple decoration consisted primarily of the wall paintings. Additionally, temple furniture was set up in the east pteron consisting of a perirrhanterion and a tripod; pits for bases of statues have been found within the south pteron.[34]

The dimensions of the stylobate were 14.10-40 x 39.25 m; the eastern side was 0.30 m greater in width than that of the western end. A peristyle of 7 x 19 columns was first proposed by Broneer and revised to 7 x 18 columns by his successors.[35] The cella, c. 7.90 x 32.28 m, had a central row of columns down the naos and pronaos. Wall piers stood on the outside of the cella walls at intervals of 2.26 m which also probably framed panels of wall-paintings (*figure 3b*). Broneer reconstructed the temple with a Doric colonnade and entablature, but there is no sure evidence for this and others have suggested it was a non-Doric, non-peripteral temple.[36]

Materials recovered from deposits indicated that the temple was constructed in the first half of the seventh century, probably in the second quarter.[37] First of all, the pottery from the construction layer included two Geometric sherds but otherwise was predominantly Protocorinthian. Secondly, a perirrhanterion *c.* 660-650 BC was set on the earliest floor level providing a terminus date for its construction.[38] Two later Archaic floors indicated that remodellings were made around the middle and at the end of the sixth century. Neither of the remodellings showed any major structural changes to the building, just a few alterations within the cella and pronaos.

PERACHORA

There were two sanctuaries for Hera at Perachora, Limenia and Akraia. The latter was down at the harbour while the Limenia sanctuary was further up the hill. The Limenia sanctuary had a temple from the Geometric period which was re-roofed in the Archaic period. The Akraia sanctuary had two or possibly three temples. The first temple was apsidal and from the Geometric period; it was

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[34]Gebhard and Hemans (1992) 38.
[35]Gebhard and Hemans (1992) 34, fig. 8; Broneer (1971) 54, pls. 3-4.
[36]Rhodes (1987a) 477-480; id. (1984) 59-60; Mallwitz (1981) 635-637; Broneer (1971) 50, 53-55.
[37]Gebhard and Hemans (1992) 34 and 39; Broneer (1958) 28.
[38]Sturgeon (1987) 53, pl. 1; Broneer (1971) 3, 55.

replaced by a larger late sixth century temple further to the west. Reused blocks in the late sixth century temple were believed to have belonged to a previous temple that replaced the Geometric structure.[39] This was the only possible evidence for an Early Archaic temple, but these blocks could have easily come from another structure.

TEMPLE OF HERA LIMENIA[40]

This structure stood in the southeastern part of the temenos up the hill from the Akraia sanctuary. It was a small rectangular structure, 5.60 x 9.50 m, that was built in the Geometric period and had a terracotta roof added in the Archaic period.

There were several decorated and undecorated tiles including an eaves tile with two attached covers.[41] It was probably placed in the centre of the roof so that the two covers would overlap neighbouring pans.

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[39]Evidence for its existence was only circumstantial. Dedications, not associated with the apsidal Geometric temple, from the late eighth to sixth centuries have been found near the harbour. On the other hand, Dunbabin (1951) 62-63 thought that worship was switched to the Limenia sanctuary when the apsidal Geometric temple was abandoned.

[40]Payne (1940) 110-122, pls. B, 140.

[41]*Corinth Museum FC102-103*. M. Roebuck (1990) 49 n. 6; Heiden (1987) 21; Robinson (1984) 55 n.1; Payne (1940) 113-115, fig. 18, pls. B, 127.

ANALYSIS OF EARLY ARCHAIC TEMPLES IN CORINTHIA

INTRODUCTION

There were only two temples built securely in the Early Archaic period whose remains have survived well enough to make a judgement as to their appearances: the temples of Apollo at Corinth and Poseidon at Isthmia. As the Isthmian temple was the better preserved of the two and both temples' remains were nearly identical, it is possible that those features destroyed in the Corinth temple were the same as those preserved at Isthmia.

PLAN

The Isthmian temple was oriented towards the east and was fairly monumental in scale when compared to other temples of this period in the Peloponnese. If the Corinth temple was beneath its Late Archaic successor, it probably had a similar size and orientation to the east (*figure* 3a). At Isthmia, a wooden peristyle stood on a single step stylobate encircling the cella building with an extra step at the entrance to the east (*figure* 3b). Its cella building had a central colonnade running through the naos and pronaos. Isthmia's walls had piers along the exterior at equal intervals, and antae capped the ends of the walls. The walls did extend a little past the rear wall perhaps creating a very shallow opisthodomos. Since no remains are in situ, the Corinth temple's plan can only be conjectured. It could have mirrored that at Isthmia. Alternatively the smaller scale may suggest that whereas the plan of the Isthmian temple was peripteral, the temple at Corinth may have had only a cella building.

MATERIALS AND CONSTRUCTION TECHNIQUES

Among the materials used in the construction of the temples were worked stone blocks, wood, terracotta roof tiles, and possibly mud-brick. Wood was used for doors, columns, beams, piers, and possibly a Doric entablature. The Isthmian peristyle would have been made most likely of wood because no stone columns, capitals, or entablature were found. Bedrock was used as the foundations of the buildings; their floors were of packed earth. Mud-brick in small quantities was

found in the destruction debris of both temples. Walls were then built either entirely of stone or with mud-brick upon a stone socle.[42] The small amount of mud-brick found at both sites may have been used for the epistyle above the colonnades or in other Archaic walls within the sanctuaries. The cuttings in 'group six' blocks (*figures 5c-d*) for the top course would not be consistent with the laying of mud-brick. If the wall was only partly stone then the religious inscription would have been seen at the bottom of the wall; but if it was entirely of masonry, then it could have been at eye level or higher.

Limestone blocks from Corinth and Isthmia were very similar with rope grooves on their undersides, edge anathyrosis, no cuttings or dowels or clamps, and traces of painted plaster. There were several types of wall blocks which Broneer categorised at Isthmia. Stylobate blocks were his 'groups one and two'. 'Groups three and five' were basic ashlar blocks (*figures 5a-b*), and 'groups four and nine' were for the corners. 'Group six' blocks had cuttings across their tops for timbers and undamaged bands on one face for the tops of the frames of the painted panels (*figures 5c-d*); thus they must have belonged to the top course of the wall. The 'groups seven and eight' blocks had wedge-shaped cuttings only partway in the top of the blocks (*figures 5e-f*). Finally, 'group ten' blocks had a protruding sloped front typical of cornice blocks (*figure 5g*).

There are differing opinions as to the purpose of the rope grooves on the underside of the blocks. They may have been cut either to lift the blocks out of the quarry or to lift the blocks into place upon the wall.[43] As all the lower wall courses and stylobate blocks had these grooves and there was no block which definitely did not have lifting grooves, it would seem that the grooves were not cut primarily to hoist them into position on the wall, although they may also have been used that way.

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[42]Roebuck (1955) 156 thought that the walls had a socle with mud-brick superstructure, but Robinson (1976) 227 believed the walls were built completely in stone.

[43]Rhodes (1987b) 545-551 and Roebuck (1955) 156 supported the idea of quarry lifting grooves. On the contrary, Robinson (1976a) 227 believed the grooves were for hoisting blocks into place on the upper portions of the walls.

RECONSTRUCTIONS OF PROTOCORINTHIAN WALLS

There are several opinions as to how the blocks were used in the temple's construction. This is particularly complex, as there are many factors to consider and no reconstruction is entirely satisfactory. Three wall constructions that have been proposed in the past as well as new interpretation will now be discussed.

Broneer[44] proposed that the exterior walls at Isthmia had painted stucco panels framed by wooden strips. The allocation of the wall-paintings to the exterior was based primarily on blocks from the corners that have two adjacent faces with undamaged bands next to the damaged painted surfaces. He placed the 'group six' blocks (*figures 5c-d*), those with cuttings in the top surface, to the top course in which wooden blocks were slotted. 'Group seven through nine' blocks served the same general purpose or held wall brackets (*figures 5e-f*). Broneer admitted that all the cuttings in the blocks were not adequately explained. He restored a wooden and mud-brick epistyle and stone cornice upon wooden columns which may cause a problem to some.

Gebhard and Hemans[45] generally followed Broneer's reconstruction. Their excavations revealed trenches for exterior wall piers which they believed corresponded with the vertical bands on the wall. If this was the case, then the painted panels measured approximately 1.92 m wide.

Rhodes' study,[46] published before the Isthmian excavation report by Gebhard and Hemans, was based only on Broneer's findings. Rhodes proposed that the Isthmian temple was non-peripteral, non-Doric, and had painted panels on the interior. The wooden frames of the paintings were nailed to wooden blocks slotted into the 'group seven and eight' blocks which were flush with the remainder of the wall (*figure 6*). The placement of the wooden vertical posts on the interior of the walls, however, does not explain the trenches for piers on the exterior of the walls or the corner blocks with plaster on adjacent sides. Although it might seem more practical for an interior wall to be painted, a position on the exterior wall would be feasible if this was sheltered by a colonnade. Rhodes' belief in a non-peripteral

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[44]Broneer (1971) 35.
[45]Gebhard and Hemans (1992) 34, fig. 8.
[46]Rhodes (1984) 65-69, fig. 23.

temple also required the cornice blocks to be placed on the wall, and so he arranged the top course with alternating cornice and 'group six' blocks (*figure 8*). The cuttings on these blocks were used for the bedding of roof timbers, for means of attaching the horizontal and vertical wooden frames of the painted panels on the interior, and for attaching wooden wall plaques on the exterior to fill the space between the projecting portions of two cornice blocks. This arrangement was unsatisfactory since the 'group six' blocks did not show that they were covered by wooden plaques, there was no provision for ceiling beams or cross beams stretching to the internal colonnade, there was no adequate motive for using two different types of blocks on the same course, and the cuttings on group six blocks were not the same as those on the cornice blocks which were instead shallow rebates typical of cornice blocks for roof rafters. Finally, as the Isthmian temple was peripteral, the roof beams could not have ended at these blocks as they extended to the colonnade.

A new reconstruction of the Isthmian wall is proposed here which places the painted plaster panels on the exterior face of the wall. The colonnade would have sufficiently sheltered the wall-paintings because of the corner blocks and the existence of exterior piers would explain how the vertical planks were anchored. Wooden vertical boards ran down the face of the wall and were bedded into the 'group seven and eight' blocks, the width of the cuttings on which were the same as those for the preserved vertical bands on the wall blocks (*figures 7a-b*). These blocks were sunk into the pier trenches and had the wedge-shaped cutting facing the wall to receive the wooden planks (*figure 7a*). The blocks were either sunk completely into the trench so that their tops were level with the floor or their edges were above floor level, which seems to have been the case since the three faces away from the cuttings were crumbled from the fire. At the top of the wall were the 'group six' blocks with cuttings running through the blocks' top surfaces (*figure 9*). Instead of roof rafters springing from the cuttings, beams for ceilings may have been laid in the cuttings and secured in place with nails or cuttings to another beam for the pteron ceiling or a block to which the wooden moulding for the painted panels could be fastened. Alternatively, the cutting might have held wooden blocks upon which rested a layer of wooden planks over both the wooden blocks and the

stone to create a bedding to which horizontal beams spanning the cella and pteron could be attached. The roof rafters could then have also been supported as they sloped down toward the colonnade, the ends of the beams being set into the cornice blocks over the colonnade. It may seem elaborate to have these cuttings for securing wood to the stone walls, but it must be remembered that these were the first two temples to be built in all probability with fully stone walls, and that their predecessors did not yet have to deal with the transition from stone walls to wood roof structures. The laying of wood on a flat stone surface may not have seemed very secure. Therefore a transition course in which wood and stone were integrated would allay fears that the woodwork could not be adequately secured to the stone wall. The use of wooden wedges in the cuttings merely as a transition course would help to explain why the cuttings varied slightly, were not spaced at equal intervals, and were too far apart to hold ceiling beams. Although cuttings with straight sides might have sufficed, the wedge-shaped cuttings with a jog would have provided extra security to keep one or two blocks in their place without any worry about their moving under the weight and outward force of the heavy terracotta roof.

THE DORIC ORDER

Neither stone columns nor entablature have been found at either temple. There may be several reasons for why no Doric fragments have been found: they may have never existed, they may simply not have survived, or they may have been made of a perishable material, such as wood. The existence of the Doric order in Corinthia within the Early Archaic period will be discussed in chapters eight and nine.

ROOFS

Two different roofing systems were used in Corinthia during the Early Archaic period. The first known terracotta tiling system was used on the two seventh century temples (*figure 11 and plate 3*). The second system was not developed until the late seventh or early sixth century (*figure 12*). Although most buildings in Corinthia were covered by this latter type of roof, none of those

buildings were Early Archaic temples. The Late Archaic temple at Corinth was the first temple known to have employed it.

THE PROTOCORINTHIAN SYSTEM

The earliest roof tiles of the Archaic period, those from the Early Archaic temples of Apollo at Corinth and Poseidon at Isthmia, are especially important for this study as they had an enormous impact on all of the other roofs that will be discussed. The roof from the Early Archaic temple at Corinth appears to have been the first terracotta tiled roof not only in Corinthia but in post-Mycenaean Greece. It was soon followed by the roof at Isthmia.

Protocorinthian roofs were marked by combination tiles and hipped ends (*figure 11 and plate 3*). The majority of tiles had a concave pan and convex cover combined into one tile (*figures 10a-b*). Single cover tiles were found at Corinth but none have been identified from Isthmia. The fragmentary nature of the single tiles would make their identification very difficult; there would also have been relatively few of them needed to cover the centre seam. Nail holes present on the single cover tiles show one method of how the tiles were anchored; at Isthmia, nails were used to secure the ridge tiles. The ridge tiles had a square cover attached to a long pan folded in half (*figure 10e*). The eaves tiles had a flattened bottom along the edge of the pan and a peaked cover profile (*figure 10c*). Hip tiles were square pans folded diagonally and connected to square covers in one corner (*figure 10d*). Two eaves hip tiles from the corners of the roof have been found at Corinth, but none have been identified at Isthmia. If even three eaves hip tiles were found at any one site, then in all probability that roof would have had hips at both ends. Since no more than two have been found at either site, the most that can be deduced is that one end was hipped.

The employment of similar and sometimes even identical features on both roofs suggested that they were fairly contemporary. Not only did both roofs use combination tiles, but the tiles were of the same shape and nearly the same size differing by only a few cm. Other striking similarities between the two roofs were the use of offsets, notches, cuttings, and the thinning of the tiles to create a complex

interlocking system (*figures 10a and 10d*). Both left-handed and right-handed varieties existed at both sites.

The differences between the two roofs was quite minimal. One difference was that a few tiles from Corinth had a black slip. The greatest distinction between the two roofs was the handling of the eaves tiles. Although their basic forms were similar, there were certain elements of the tile which differed. In particular, the outermost edge of an eaves cover at Corinth was angular and rose to a peak with straight sides; at Isthmia, the cover's peak was achieved by two concave sides. In addition, the eaves pans at Isthmia had a central triangular projection along the edge (*figures 10c and 11*). This was the most striking difference between the two roofs. It was this that has led to the notion that the Isthmian roof represented a more developed stage and was thus later than the roof from Corinth.

The importance of the Protocorinthian roofing system arises from several factors. First of all, it shows that in the earliest terracotta tiled temples at least one end was hipped. Secondly, the first decorative element on terracotta roofs occurred on the eaves tiles at Isthmia in the form of triangular projections in the centre of the pans. It was from the form of these triangular projections and the peaked covers of the eaves tiles that antefixes were developed for later roofs. Thus the lower end of the cover element of each eaves tile, modified to form two sloping surfaces, should be considered the prototype for antefixes or possibly even the oldest example of antefixes. Finally, the roofing systems of the Greek and Roman world all derived from this single roofing system. Although the Protocorinthian system had pan and cover elements combined into a single tile, it should be viewed as the forerunner of the Laconian, Corinthian, and other systems where the two elements were eventually separated. In particular, the two major types of tiling systems, Corinthian and Laconian, developed undoubtedly from this early system. The Corinthian system was made of peaked cover tiles and flat pan tiles which were slightly curved up at the ends; its origins can be seen in the eaves tiles of the Protocorinthian system. The Laconian system retained the shape of the concave pans and convex covers by simply producing each element separately.

The roofs of these two temples are essential for the study of later systems since both roofs formed the first known terracotta roofing system in post-

Mycenaean Greece. The use of combination tiles, the complicated methods of interlocking, and the virtual lack of decorative elements are the chief characteristics of this prototype terracotta roofing system.

CORINTHIAN SYSTEM

The other type of roof found on Early Archaic buildings was the most common system used throughout the Greek world, i.e., the Corinthian system. It was developed around the last quarter of the seventh or first quarter of the sixth century. The pan tiles were flat with slightly upturned edges, and the cover tiles had a peaked profile. The earliest of these tiles were combination tiles; around 540 BC the pans and covers were produced as separate elements. Like the Protocorinthian tiles, these usually had notches, cuttings, and flanges so as to interlock. The eaves pans were also flat and sometimes decorated with a single guilloche; the eaves covers had antefixes whose decoration differed for each region and period. Raking simas were vertical plaques attached to the sides of pan tiles. All known raking simas from before 550 BC were from Aegina and Delphi and had a cavetto profile decorated with painted tongues above a single guilloche.[47] After the middle of the sixth century, further ornamentation appeared, such as acroteria, lion's head spouts, and ridge palmettes as on the Late Archaic temple of Apollo on Temple Hill at Corinth.

The earliest antefixes of this system were pentagonal in shape and decorated with spiralling tendrils and a small palmette (*figure 12*). These antefixes dated generally to the first half of the sixth century. The earliest examples were the same size as the attached eaves tile, dated to the first quarter of the sixth century, and came from Corinth, followed by those from Aegina, the Athenian Acropolis, Delphi, Eleusis, Epidaurus, and Tiryns.[48] The antefix plaques became taller in the

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[47]Winter (1993) 33-34; Billot (1990) 133-134; Heiden (1987) 39-41. *Aegina Museum*: Furtwängler (1906) 145, fig. 119, pl. 23.1. *Delphi Museum S3*: LeRoy (1967) 32.

[48]Billot (1990) 117, 122 says this type was not earlier than 580 BC; but Winter (1993) 20, 64-66 places the earliest example, Corinth FA101, to before 600 BC and the last, Corinth FA 237, to 570 BC. *Aegina Museum 287*: Furtwängler (1906) 173, pl. 48.2. *Acropolis Museum K230-10124, K231-10125*: Buschor (1933) figs. 39-42. *Corinth Museum FA 101 and FA237*: M. Roebuck (1990) 51, pl. 5; Williams (1980) 347 n.13, pl. 154b. *Delphi Museum A3, A5, A171*: LeRoy (1967) 32-34, 43, pls. 5-6. *Eleusis Museum*: Koch (1915) 79, fig. 36. *Epidaurus Museum ME 353 and 381*: Billot (1990) 107-109, fig. 4, pl. 11a. *Nauplion Museum 13564*: Hübner (1975) 118-119, pl. 64.3.

second quarter of the sixth century.[49] Around the mid sixth century, the antefix plaques were even taller and the design more ornate.[50] In the third quarter of the sixth century the form and decoration of antefixes in Corinthia changed to that of large palmettes which adorned the Late Archaic temple of Apollo at Corinth.

CONCLUSION

The similarities between the Early Archaic temples at Corinth and Isthmia indicate that a regional style existed. The temples had a cella built entirely of ashlar blocks, surrounded in one case certainly, and in the other possibly, by a wooden peristyle. The walls were adorned with painted designs upon a white plaster wash.

The first post-Mycenaean roofing system was developed in Corinthia during the early seventh century BC. Both the Corinthian and Laconian tiling systems developed from the Protocorinthian system. The similarities of the two Protocorinthian roofs suggest that they were of somewhat contemporary date probably within a generation of each other. That from Corinth was assumed to be the earlier roof based on the notion that the triangular projections and the profile of the covers on the Isthmian eaves tiles were a later development. The importance of examining these roofs was evident since they were the first terracotta roofs known. The first instance of decoration on roof tiles was also found in this system as well as the prototype for antefixes. In addition, the Protocorinthian system demonstrates that early temples had hipped roofs on at least one end. But perhaps the most important reason for studying this roofing system is the fact that subsequent systems developed from it, particularly the next system developed in Corinthia which was subsequently the most common tiling system in the Greek world.

The temples of Corinthia are perhaps the most important temples of the Peloponnese. Many innovations of the seventh century appear to have taken place

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[49]*Corinth Museum FA204, FA543, FA553*: M. Roebuck (1990) 51-52, pl. 5; Williams (1980) 347, pl. 155; Robinson (1976a) 236, pl. 53a. *Aegina Museum 96*: VanBuren (1926) 130-131, fig. 5. *Delphi Museum A9*: LeRoy (1967) 33-34, pls. 5, 118. *Eleusis Museum*: Billot (1990) 124-126. *Corinth Museum (from Perachora)*: Payne (1940) 113-115, pl. 132. *Poros Museum (from Troizen)*: Legrand (1905) 273, fig. 2.

[50]*Corinth Museum FA 446, FA518, FA 550, FA 559*: Roebuck (1990) 53, pl. 5; Wiseman (1969) 99, pl. 31e; Robinson (1962) 114, pl. 41e.

in Corinthia which were incorporated in these temples, including ashlar blocks, fully stone walls, and possibly the Doric order.

CHAPTER TWO: THE ARGOLID

The Argolid is rich in remains from both the Helladic and Early Iron Age periods. Reverence for the Mycenaean past can be seen in the cults for its ancestors established in the eighth century and continuing through the Archaic period. Even some of the Early Archaic temples were built upon or near Mycenaean settlements. Another issue which may have affected architecture in the region was Argos' power, wealth, and expansionist policies. Argos must have wielded not only control but influence over most of the region.

The Argolid is bordered by mountains to the west and southwest effectively isolating it from Arcadia and Laconia, the latter being an enemy in the Archaic period. The region to the south of Argos along the shores of the Argive gulf is Thyrea, an area which was a source of conflict between Argos and Sparta for its control. The northern border with Corinthia was less well defined. One city along the border was Kleonai which administered the games at Nemea; it appears to have been within the sphere of Argos' influence in the early sixth century.

Sanctuaries were abundant in the Argolid from the Early Archaic period, but only those with temple remnants will be included in the discussion (*figures 13-14*). Several temples will not be covered since their precise dates were unable to be determined as either they were poorly preserved or relevant stratigraphy was not recorded during their excavations.[51] For instance, Kleonai most likely had an Archaic temple of Athena since Pausanias (II.15.1) recorded the sculptors of its cult statue as Dipoinos and Scyllis who were sons or pupils of the famous sculptor Daidalos and were active in the sixth century. A temple would thus have been needed to house the cult statue. Ruins of the Athena temple were identified by an inscription on the acropolis, but unfortunately the only traces of a building belonged to a later date.

Permission to view material in museums and in situ was granted for almost all sites, apart from Mycenae. Much of the material said to have been housed in the

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[51]*Douka*: Protonotariou-Deilaki (1970) 156. *Katsingri*: Protonotariou-Deilaki (1963) 65-66. *Kourtaki*: Papachristodoulou (1968) 131-132; Greek Archaeological Service (1967) 178-179. *Magoula*: Vollgraff (1907) 179-180.

Nauplion Museum was unable to be located by the local keepers. All temple remains in situ were studied, although a few were covered over after excavations were completed.

REMAINS AT SITES

ARGOS

Unfortunately the modern city of Argos rests directly upon the Archaic city practically obliterating any trace of buildings including all temples. Archaic temples must have stood in Argos since the city had great political and economic prominence both in the Argive plain and in the Peloponnese. Ancient literary sources mentioned temples and sanctuaries within the city, some of which must surely have been Archaic. The most important deity of the city was Apollo whose revered sanctuary had the epithet of Lykeios and whose temple was situated near the Agora according to Pausanias (II.19.3). This temple has never been found, but it probably was erected sometime in the Archaic period since it was considered to be a very old cult.

Likewise, the temple of Apollo Pythaios on the Aspis, as mentioned by Pausanias (II.24.1) and Thucydides (V.53), has vanished. Thus its date and plan cannot be determined. Nevertheless, the presence of a cult in Archaic times was attested by many Geometric and Archaic sherds as well as a votive deposit dated to the seventh and early sixth centuries. Although nothing of the temple exists now, the dates of an antefix (*figure 16d*) and a sima fragment imply that the structure was built in the second half of the sixth century.[52] Another temple on the Aspis and adjacent to the sanctuary of Apollo was the temple of Athena Oxyderkes as mentioned by Pausanias (II.24.2). Although nothing appears to have survived, Vollgraff estimated that a temple was constructed in the third quarter of the sixth century based on the date of votives from the sanctuary but not from any building

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[52]*Argos Museum*. The terracotta antefix whose outline had three peaks and whose face had a moulded palmette and lotus motif was from the mid sixth century BC. The sima fragment (*Argos Museum C26701*), also *c.* 550-540 BC, had a flat plaque topped by a torus; the plaque was decorated with polychrome tongues. Billot (1990) 129, pl. 11; Hübner (1975) 121, pl. 68.6; Vollgraff (1956) 18, fig. 15.

deposit.[53] Besides the roof revetment from the Apollo sanctuary, others have been found on the Aspis including undecorated eaves tiles with upward curving sides that were not attached to antefixes.[54]

Within the modern city of Argos several Archaic sanctuaries have been identified, but no temples dating from the mid seventh to mid sixth century have been discovered within them. A very small temple, dating to the second half of the sixth century, existed between Gounaris street and the Theatre.[55] Its female and animal figurines indicate cult activity and an occupation of the building from the second half of the sixth to the beginning of the fifth centuries. South of the Odeion and within the Aphrodite sanctuary, a middle to late sixth century altar was uncovered, but it seems that a temple was not constructed there until the late fifth century BC.[56] Although a deposit dating from the Geometric to the Early Archaic periods was discovered on the Bonoris plot, a structure was not erected there until the fifth century.[57]

A few architectural terracottas dating mostly from the end of the Early Archaic period, around the middle of the sixth century, have been published from the Agora. Among them were undecorated and unattached eaves tiles with upward curving sides.[58] Two possible antefix types were also found. One was of the moulded three-peaked variety decorated with a palmette over a reversed lotus (*figure 16d*);[59] the other had an incised palmette finial similar to that on figure 16c.[60]

Although there was a great deal of evidence for cult activity all over the city of Argos in the Early Archaic period, no temple buildings can be associated with them.

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[53]Vollgraff (1956) 52.
[54]*Argos Museum C26728 and C9890.* Another fragment was of a sima that was practically identical to the one found at the Pythean sanctuary; it may have belonged to the same building or to Building E. Billot (1990) 129, figs. 7-8; Kolokotsas (1990) fig. 2; Vollgraff (1907) 155-156, fig. 4.
[55]Daux (1957) 673-677; Deshayes (1956) 366 for associated Archaic finds.
[56]Daux (1969) 994-1012; Daux (1968) 1025; Pausanias II.20.8.
[57]Touchais (1980) 599.
[58]*Argos Museum C27701 and 81/7011.1.* Billot (1990) 107, 110, fig. 5, pl. 10d.
[59]*Argos Museum 76/1835.1 and C19109.* Billot (1990) 110, fig. 5, pl. 11c-d; Kolokotsas (1990) 144, fig. 3.
[60]*Argos Museum 77/507.1 and C11482.* Winter (1993) 177-178; Billot (1990) 127-129, fig. 6, pl. 11e. Winter believed these were ridge acroteria.

ARGIVE HERAION

A sanctuary outside the city of Argos but administered by it was the Argive Heraion, the most important sanctuary in the Argolid.[61] The Argive Heraion is near to both Argos and Mycenae located on a low hill. The Early Archaic temple and probably a predecessor stood on a terrace 34.40 m wide x 55.80 m long x 3.25 m high. The terrace is constructed of extremely large unworked boulders reminiscent of Cyclopean masonry of the Mycenaean period (*plate 4*).[62] It was to this period that some, like Tilton and Plommer, have assigned the date for its erection.[63] The construction of the wall however, as Blegen pointed out, has loose and open jointing which is very different from the compactly articulated Mycenaean walls. In addition, Geometric and possibly Protocorinthian sherds were found within the walls, thus placing its construction in the late eighth century.[64] The supposition that the terrace was at least half a century older than the extant temple leads to the conclusion that an earlier temple was built as soon as the terrace was completed. This is perfectly plausible not only because of the Geometric activity but also from the evidence of a terracotta temple model of a simple peaked structure dating to the late eighth or early seventh century which may have been a model of a standing structure. This theory is furthered by the fact that the paving of the terrace underlies much of the extant temple's stylobate and was probably covered over by an earthen floor when the extant temple was built. It is then reasonable to conclude that the paving was intended for an earlier, smaller structure from the Late Geometric period that may be reflected in the terracotta temple model.

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[61]See Herodotus (I.31) for tale of Kleobis and Biton; Pausanias (II.20.3).
[62]Antonaccio (1992) 85-105, fig. 2, pl. 23; Plommer (1984) 183-184; Wright (1982) 186-187, 191-192; Plommer (1977) 75-88; Amandry (1952) 225; Blegen (1937) 19-20; Frickenhaus and Müller (1911) 21-38; Tilton (1902) 109-110.
[63]Plommer (1984) 183-184; Plommer (1977) 75-88; Tilton (1902) 109-110.
[64]Wright (1982) 188; Blegen (1937) 20; Frickenhaus and Müller (1911) 21-38. Drerup (1969) 57-59 and Antonaccio (1992) 98, on the other hand, proposed a late seventh century date for the terrace so as to be contemporary with the peripteral temple. Antonaccio (1992) 98 further proposed that a terrace at Prosymna may have been the predecessor to the Argive Heraion; Blegen (1937) 263 dated that terrace to the Geometric period judging from the sherds recovered within the wall.

EARLY ARCHAIC TEMPLE[65]

Only a few remnants of the seventh century temple still stand on the terrace, but the little that survives reveals that it was a monumental peripteral building. No foundations were needed since the stylobate and walls stood directly on the paving and the terrace (*plates 5-6*). The remains consist of the single-stepped stylobate along the southern side, whose preserved length was *c.* 19.20 m. Taking into account the length of the terrace, the temple could have been up to 45 m in length. The stylobate blocks are of polygonal masonry with a width of 1.04 m and a height of 0.50 m (*plate 5*). The individual blocks have a series of bosses for placing them in position probably with levers rather than ropes.[66] It was a trait seen as an advance over other methods for moving blocks like the rope grooves on the Corinthian temples. The blocks also have a simple anathyrosis leaving only narrow finished edges. Only the upper half of the blocks on both interior and exterior faces were dressed (*plate 7*); so the lower portion must have been below floor level. This would then indicate that the terrace paving was not visible and not laid for the temple's use. During its excavation, a layer of earth was recorded 0.30 m above the paving stones at the same point as the transition between the dressed and undressed faces of the blocks. Although Kalpaxis interpreted this as accumulation of mud-brick from the cella walls, Tilton identified it as the temple's floor.[67] Within the cella stood the cult statue, the base of which was approximately 7.18 m north of the line of the preserved southern stylobate; it measured 1.80 m square.

The temple was peripteral as there are traces of four columns on the stylobate blocks with diameters of 0.78-80 m and an intercolumniation of 2.70 m (*figure 15a*). The columns may have been of stone or wood. A stone drum which now sits on the stylobate (*plate 6*) could have been either a column drum or else a base for a wooden column. Although there is no evidence that it originally belonged to the temple, its diameter exactly fits that of the column markings. The drum has a U-shaped lifting hole in the top, a slight taper, and striations around the

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[65]Wright (1982) 188-191; Amandry (1952) 223-225, figs. 1, 3-4; Tilton (1902) 110-111 who restored the temple as measuring 8.50 x 36.30 m with a peristyle of 6 x 14 columns.
[66]Coulton (1974) 4-5, fig. 5a.
[67]Kalpaxis (1976) 46; Tilton (1902) 110.

exterior face to show that it was turned on a lathe.[68] Stone capitals dating from the early to mid sixth century are lying around the site (*plate 8*), but they too cannot be securely associated with this temple. Instead they may have served the North Stoa since they were found within it.

The only other architectural fragments that possibly belonged to the Archaic temple were a series of three-peaked antefixes with plain faces dating from the late seventh or early sixth century BC (*figure 16a*).[69] These antefixes had no decoration apart from the red wash in which they were covered. From the same period was a corner acroterion from a hipped roof, although the building to which it was set is not known.[70]

The date of the temple is generally believed to be of the second half of the seventh century.[71] Unfortunately, a more precise date for its construction cannot be given as stratigraphy was not recorded during excavation. As for its destruction, Pausanias (II.17.7) claimed it was due to fire; this must have happened shortly before the last quarter of the fifth century when the Classical temple was constructed on the lower terrace. No subsequent structures seem to have been built over the destroyed temple.

ASINE

The temple of Apollo Pythaios at Asine was situated on Barbouna hill. According to Pausanias (II.36.5), it was left standing when Argos destroyed the city sometime before 710 BC. Pausanias stated that the Argives did not destroy the sanctuary and buried Lysikrates in it. Votives show that the Argives continued to maintain the sanctuary throughout the Archaic and into the Hellenistic periods.

The sanctuary had several structures including a rectangular one referred to as 'Building A' which was the Archaic temple. Another, 'Building B', was apsidal and the first structure built at the site; it could have been the Geometric temple.[72] It had mud-brick walls resting on a rubble socle all of which was crowned by a

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[68]Wright (1982) 191.
[69]Pfaff (1990) 149-156, figs. 2-4, pl. 12.
[70]*Athens National Museum SA293*. Billot (1990) 102-104, fig. 1, pl. 10a-b.
[71]Wright (1982) 190-191. Bergquist (1967) 19-21 surprisingly dated the stylobate to *c.* 550 BC based on a votive dump on the lower terrace.
[72]Wells (1990) 157, fig. 1.

thatched roof. The destruction date of 'Building B' was placed to around 720-700 BC by the pottery found associated with it. This date was contemporary with the Argive sacking, although Pausanias clearly stated that the temple was left intact. Even if the temple was not destroyed by the Argive invasion, the new owners may have built a supplementary or replacement temple on the site in the seventh century as an offering to Apollo or to assert their authority over the sanctuary. The sanctuary was not abandoned for several centuries showing the Argives continued to administer the cult. It may be that this was the temple that the Argives went to war over in 419 BC because the Epidaureans neglected their duty to the sanctuary of Apollo Pythaios. This episode was recorded by Thucydides (V.53) who did not specify where the sanctuary was located. Nevertheless, Barrett believed that Thucydides referred to the Asine temple although it could equally have been the Apollo Pythaios sanctuary on the Aspis at Argos.[73]

EARLY ARCHAIC TEMPLE[74]

The Archaic temple, which measured 4.30 x 9.60 m, was erected slightly to the east of the apsidal structure and faced southwards (*figure 15d*). This non-peripteral structure was composed of two rooms separated by a partition wall 0.20-30 m thick. The pronaos was 2.70 m wide x 2.40 m long; the naos was 2.70 m wide x 5.20 m long. The walls were built of large unworked stones preserved to a height of 0.60 m. They were constructed with an outer and inner shell and a core of rubble; their corners were bonded. The wall socle, 0.80 m wide along the flanks and 1.00 m wide at the rear, carried mud-brick as shown by fragments of burnt clay. Both the main entrance and the doorway into the naos were slightly off-centre and 1.20 m wide. The entrance had a threshold of about ten ashlar blocks that were not bonded with the walls. Traces of paving stones were seen in both rooms. Along three walls of the rear room was a ledge, 0.30 m wide, presumably for benches. Alongside the northern outer wall and within the building, roof tiles and sima fragments were recovered in the excavations.

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[73]Gomme (1970) 71; Barrett (1954) 428, 438-9.
[74]Wells (1990) 157-161, figs. 1-2, pl. 13; Frödin and Persson (1938) 148-151, fig. 130.

Geometric, Protocorinthian, and Corinthian sherds as well as Archaic figurines were discovered in and around the temple. In particular, Corinthian sherds were found at the level of the benches. According to Wells, the pottery from the trenches along the walls gave a terminus post quem for its construction at the end of the eighth century.[75] Frödin and Persson dated the temple to the seventh century since most finds were Archaic and there were only a few Geometric sherds which may instead have been associated with the apsidal building.[76] This temple was renovated or repaired as shown by the sima from the late sixth century BC.[77]

EPIDAUROS

The sanctuary of Apollo Maleatas on Mt. Kynortion was established in the Late Geometric period with an altar, but no temple seems to have been built before the fourth century.

The site where the sanctuary of Asklepios now lies was not founded until the sixth century; it was probably dedicated originally to Apollo with the worship of Asklepios added later. There were no traces of a temple from the early part of the sixth century; nevertheless a pentagonal antefix from the mid sixth century was among the finds. It had a moulded palmette and volute stems (*figure 16e*).[78]

HALIEIS

When Pausanias (II.36.1-4) visited the port city of Halieis, it was no longer inhabited. Three sanctuaries were discovered in the course of excavations: one on the acropolis established in the sixth century with two altars; another outside the city belonging to Demeter of which no buildings have been detected; and a third which lies submerged in the harbour with an Archaic temple.

In the harbour sanctuary lies the Archaic temple, a long and narrow altar to its south, another long building to the east of the temple, and a drain between them. The building adjacent to the east of the temple was almost parallel to it and may

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[75]Wells (1990) 157.
[76]Frödin and Persson (1938) 149.
[77]Wells (1990) 157-160, fig. 2, pl. 13a-c.
[78]*Epidauros Museum ME 353 and 381. c.* 560-540 BC. Billot (1990) 107-109, 124, fig. 4, pl. 11a; Kolokotsas (1990) fig.1.

have been another temple or a stoa; as everything above the foundations was robbed completely, its plan, function, and date cannot be determined with any certainty. There was, however, evidence that it had an Early Archaic Laconian roof with a large disc acroterion similar to those found in Arcadia (see chapter three).

EARLY ARCHAIC TEMPLE[79]

The harbour sanctuary had a long, narrow temple measuring 4.46 x 27.00 m (*figure 15b*). Oriented to the south, it had three rooms as well as a pronaos. There was no evidence for an external colonnade. A module of 0.273 m has been proposed for the measurements throughout the temple; for instance, a regular pan tile was two modules by three.[80]

The pronaos was 3.50 m long, the naos 7.80 m long, the middle room 8.25 m long, and the northernmost room 5.40 m long. In all three rooms, irregular stones were laid as paving. The pronaos and the naos were entered from the south, whereas the middle and rear rooms had entrances from the west through separate doorways. Rectangular limestone bases for wooden columns set at irregular intervals ran down the central axis of the two northern rooms. In the middle room, a square base of limestone slabs stood in the north-east corner. Finds from these two rooms were primarily weapons, cooking utensils, and bones leading to the conclusion that they served as dining facilities. Bergquist argued that this entire building was originally a hestiatorion whose southern room was later given over to temple function.[81] On the other hand, inscribed keys to Apollo, votive offerings, and the temple-like plan of the southern portion of the building instead suggest that the temple proper consisted only of the southern half of the building, the rear rooms being auxiliary, perhaps dining facilities or treasuries.[82]

When the ritual meal was no longer performed in temples by the early seventh century, it had to be moved elsewhere. This temple was a combination of the old tradition of hearth and dining temples of the Geometric period and the newer

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[79]Bergquist (1990b) 23-37, figs. 2-3; Jameson (1973-4) 261-264; id. (1972) 233-236; id. (1971) 114-119; id. (1969), 311-342.
[80]Boyd and Rudolf (1980) 340.
[81]Bergquist (1990b) 36.
[82]In *figure 15b* the pronaos and naos are darkened while the subsidiary rooms are in outline in order to compare plans of temples more easily.

tradition of housing the cult statue established in the early seventh century. The architects combined the two functions into one very long building with the cult statue and its offerings at one end and the ritual meal taking place at the other. Therefore the southern half of the building will be treated as the temple proper which closely follows others in the same period consisting of a pronaos and naos. The naos had a statue base, perirrhanteria, pottery, axes, coins, weapons, cooking debris, and iron keys for the doors to the temple of Apollo. The statue base in the naos was off-centre as was the column base behind it. The walls, *c.* 0.80 m thick, had socles made of two faces of limestone slabs upon which mud-brick upper walls rested. The bottom course of the walls projected into the cella creating a ledge. Small semicircular bases were set at intervals of approximately 1.5 m along the interior of the cella walls; wooden piers would have been set upon these bases. The walls were covered with painted plaster, fragments of which were discovered in the excavations.

The entire structure was roofed with Corinthian tiles which may have replaced an earlier thatched roof. Pan, cover, ridge, and eaves tiles, as well as undecorated three-peaked antefixes (*figure 16a*) were well preserved.[83]

The date of the Halieis temple was placed in the first half of the seventh century based on associated votives and sherds and radiocarbon dating.[84] Bergquist believed that there was a remodelling phase when the rectangular column bases in the northern rooms and the threshold bocks in the entrance to the naos were added.[85] This remodelling phase may have coincided with the adding of the terracotta roof later in the seventh or early in the sixth century. It was destroyed around the middle of the fifth century.[86]

MASES

At Mases, a sima of the fifth century and two Archaic antefixes were discovered. The buildings that they adorned have not been located. The antefixes

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[83]*Nauplion Museum*. N.K. Cooper (1990) 65-77, figs. 2-10; N.K. Cooper (1989) 33-47, figs. 10-14, pls. 9-10.
[84]Jameson (1982) 365-367; id. (1974) 118; id. (1973-4) 262; id. (1973) 224; id. (1972) 234; id. (1971) 118-119.
[85]Bergquist (1990b) 27.
[86]Jameson (1973) 224.

and sima were of different dates, so they were either from different buildings or different phases of the same building. Although it is not known to whom the temple was dedicated, Pausanias (II.35.8) did mention a sanctuary of Eileithyia at Mases.

EARLY ARCHAIC REMAINS[87]

The antefixes from Mases were discovered together with fragments of early Doric capitals, which have not been published, on a long terrace that may have accommodated a temple. The antefixes were of the plain three-peaked variety similar to those from Halieis and the Argive Heraion (*figure 16a*).[88] They were covered with a red glaze.

MYCENAE

Mycenae had several sanctuaries active in the Archaic period. One shrine, situated near the Mycenaean House of the Oil Merchant, was apsidal and built in the Late Geometric period.[89] Another was the Agamemnoneion lying one km south of the Mycenaean acropolis along the banks of the Chaos river.[90] Its cult was established in the Geometric period as verified by votives and pottery; worship continued through the Archaic period. Among its finds were Corinthian roof tiles, supposedly Archaic, which indicate that some sort of structure was built. The third shrine was located one km north of Mycenae at Asprochomata and was dedicated to Enyalios as shown by an inscription on a bronze helmet.[91] Although the sanctuary was set up in the late eighth century, the extant shrine or temple was from the fifth century.

ACROPOLIS SANCTUARY

On the acropolis of Mycenae, a sanctuary was established in the eighth century judging from the recovered pottery and bronzes.[92] The cult is usually

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[87]Dengate (1974) 123.
[88]N.K. Cooper (1990) 74, fig. 9.
[89]Verdelis (1962) 85-87.
[90]Cook (1953a) 30-68; id. (1953b) 112-118.
[91]Mylonas (1966a) 111-114; id. (1965) 95-96.
[92]Wright (1982) 194; Mylonas (1957) 42, 63, fig. 14; Wace (1949) 84-86, pl. 19; Wace (1939) 210; Tsountas (1886) 59-61, pl. 4.

associated with Athena because of an inscribed Archaic bronze plaque. Alternatively, the cult may have been of Hera since an early fifth century inscription from the Perseia Fountain House documented the boundaries of her precinct.

In the Archaic period, a temple was built over the palace upon a terrace constructed in the seventh century judging from the sherds in its fill.[93] The terrace was extended twice to accommodate the later Hellenistic temple. The extant temple remains are from the Hellenistic period; it was southwards facing and possibly peripteral. Earlier architectural fragments belonging to the Archaic period were discovered either nearby or built into the foundations of the Hellenistic temple. However, there is no trace of this Archaic temple in situ.

Although Foley and Wace dated the earlier temple to the early sixth century,[94] the evidence does not support this. On the contrary, the earliest architectural fragments are from the mid sixth century. Moreover, a sima and an eaves tile,[95] both dating to the mid or third quarter of the sixth century, suggest a Late Archaic date for the temple. Stone cornice blocks with U-shaped holes have been recently dated by Klein to the first half of the sixth century.[96] However, the other architectural fragments from the temple are from around or after the middle of the sixth century. If the cornice could be placed at the lower end of Klein's estimate, that is the mid sixth century, it would then have been contemporary with the architectural terracottas. Thus a Late Archaic stone temple was probably built around 550-530 BC.

An earlier temple, made of more perishable materials, could have been built upon the terrace in the seventh century. An earlier temple would concur with a series of sculptural reliefs found near the south-east corner of the terrace dated to around the last quarter of the seventh century.[97] The stone reliefs may have

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[93]Wace (1949) 84; Wace (1921-23) 245.
[94]Foley (1988) 143; Wace (1949) 85; Wace (1939) 210.
[95]*Nauplion Museum 17256, 17259, 17283, and 17295.* Winter (1993) 184; Hübner (1975) 121-125, fig. 3b, pls. 65.1-6 and 66.7-8.
[96]Klein (1991) 141; Coulton (1974) 2.
[97]Harl-Schaller (1972-3) 94-116; Bookidis (1967) 166-173; Wace (1949) 85, pl. 107; Kourouniotes (1901) 18-22.

adorned the temple or an altar. The reliefs could then have been reused on the Late Archaic temple either as orthostates or metopes.

The seventh century sanctuary could then have consisted of a terrace, an altar decorated with relief panels, and a small temple. Around the middle of the sixth century, the structures were replaced with a larger stone temple which possibly reused the reliefs.

NEMEA

The site of Nemea is located in the district of Kleonai in the northern part of the Argolid. In the early sixth century the sanctuary was administered by the city of Kleonai which set up its games in 573 BC. Argos was in control of the games by *c.* 400 BC. A temple was built at approximately the same time. The Archaic temple appears to lie beneath the fourth century temple of Zeus with a slightly different axis.

EARLY ARCHAIC TEMPLE[98]

Several blocks and walls beneath the fourth century temple have a different alignment and, hence, served no purpose for the Classical structure. A heavy foundation wall running east-west, visible on the north side of the Classical adyton, was probably the south wall or stylobate of the Archaic temple measuring 0.92 m in width (*plate 10*). A pit in the central part of the cella revealed that the wall continued eastwards. The east, west, and north walls of the Archaic temple must have lain within the limits of the fourth century temple as no traces were found beyond it. Therefore the temple could only have been 10 m wide by 45 m long. The Archaic floor level appears to have been that of the later temple's adyton.

Limestone wall blocks, showing traces of burning, were among the destruction debris of the temple discovered during excavations. Some of them had also been reused in the fourth century temple's foundations. The blocks had 'ice-tong' lifting holes, painted stucco, anathyrosis on the undersides and ends, dowel

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[98]Birge, Kraynak, and Miller (1992) 23-24, 63-64, 74, fig. 72; Stephen G. Miller (1990) 58-62, 131, figs. 17-18; id. (1981) 50-54; id. (1980) 180-187, fig. 2; id. (1976) 68-69.

holes, and pry marks.[99] A pair of lifting holes were cut on the upper surfaces near one end; because they perforate all the way through they are U-shaped holes rather than 'ice-tong' holes (*plate 12*).[100] These holes were probably for levers since they were set on one end of the blocks. The blocks had cuttings *c.* 0.10 m deep across the upper surface (*plate 11*) presumably to receive wooden beams as on the Early Archaic temples at Corinth and Isthmia. No fragments of any architrave, frieze, entablature, column, or capital have been discovered. The temple may not have been peripteral but a simple cella structure with walls *c.* 0.88 m wide covered with thick plaster.

A stone geison block had red painted plaster as did other blocks. It appears therefore that the walls were covered with white plaster and then painted with decoration. The doors were most likely covered with bronze since both bronze nails as well as the bronze sheathing with nail holes were among the debris.[101]

Corinthian type roof tiles had identifying stamps on their pans, covers, ridges, eaves, and hips.[102] The hip tiles from along the western side of the temple show that at least this end was hipped (*plate 13*). Several different types of antefixes were found, all of a tri-peaked form.[103] One type was incised with projecting volutes on the sides and a palmette in the central peak (*plate 14*). The other type also had three peaks, but the face was plain (*plate 15 and figure 16b*). The ridge of the roof was adorned with ridge acroteria of a different fabric from the roof tiles and antefixes consisting of a vividly coloured large palmette and volutes; they must have been a later addition.[104]

The temple is dated by a working chip layer containing sherds and votives to the first half of the sixth century.[105] A remodelling phase in the second half of the sixth century is assumed by the use of ridge acroteria that were stylistically later

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[99]Birge, Kraynak, and Miller (1992) 24, 63-64; Stephen G. Miller (1990) 183-185, pl. 38d; id. (1981) 50; id. (1976) 69, fig. 15. The wall blocks were *c.* 0.31-32 m high, *c.* 0.88 m wide, and *c.* 0.92-93 m long.
[100]Coulton (1974) 2.
[101]Stephen G. Miller (1980) 187.
[102]Stephen G. Miller (1981) 52, pl. 15b-d; id. (1980) 185-186, fig. 3, pl. 39a-d.
[103]*Nemea Museum AT85, 88, 90-92, 103, 107-112, 118, 139.* Stephen G. Miller (1990) fig. 17; id. (1981) 52, pl. 15b,f; id. (1980) 185-186, pls. 38e, 39a-d.
[104]Stephen G. Miller (1990) pl.18; id. (1981) 52, fig. 4, pl. 15e.
[105]Stella Miller (1983) 74; Stephen G. Miller (1981) 54; id. (1980) 187; id. (1978) 63.

than the rest of the temple. In the late fifth century, the temple was destroyed perhaps accidently in the course of a battle.[106]

TIRYNS

Tiryns, like Mycenae, had a temple placed upon the Mycenaean palace, but here the temple was built directly upon the megaron. An altar stood directly opposite the temple in the Mycenaean courtyard. A votive deposit from the Upper Citadel shows that a cult was established by the Late Geometric period. Both Hera and Athena are attested on this site and could have been the deity to which the temple was dedicated. An Athena cult may have been located near the gate as votives for her were found near the gate and beyond the west wall.[107] Female figurines of Hera, as well as a passage in Pausanias (II.17.5) reporting that the cult statue of Hera was moved to the Argive Heraion, require a temple to house the cult statue. That temple for Hera was probably this one over the megaron.

EARLY ARCHAIC TEMPLE[108]

Oriented to the south, the temple measures 6.90 x 20.90 m (*figure 15c and plate 9*). It had a pronaos and a naos but no peristyle. The wall socles, *c.* 0.56-60 m wide, are of small unworked stones resting directly on the Mycenaean megaron floor.[109] The east wall of the Mycenaean megaron was reused for this temple, unlike the new west and north walls. The pronaos walls are double the thickness of the others. The rear wall rests on an old column base from the Mycenaean megaron. Another Mycenaean column base stands in the interior of the naos, while a third is centred in the pronaos between the antae.

An Archaic Doric capital was built into a Byzantine wall and has been dated anywhere from the mid seventh to early sixth century (*figure 40d*).[110] Moreover,

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[106]Birge, Kraynak, and Miller (1992) 24-25; Stephen G. Miller (1982) 100-108; id. (1981) 51; id. (1980) 183-187; id. (1979) 81. Thucydides (V.58-60 and VI.95) attested to military activity in Nemea in 419/8 BC and 415/4 BC.

[107]Touchais (1984) 759; Jantzen (1975) 106.

[108]Wright (1982) 195-198; Jantzen (1975) 96-107, 126-131; Blegen (1921) 130-134; Frickenhaus, Müller, and Oelmann (1912) 2-13.

[109]They stand to a height of 0.45 m on the west and 0.65 m on the east.

[110]Jantzen (1975) 126-128, fig. 37; Sulze (1936) 14-36, figs. 1-3. Abacus width 0.85 m, width at neck 0.36 m, abacus height 0.29 m.

roof tiles and two Early Archaic antefixes were discovered, one along the entrance ramp to the upper citadel. One antefix, *c.* 580-560 BC, was pentagonal with a moulded palmette and tendrils; it was attached to an eaves tile painted with a guilloche (*figure 16e*).[111] The other antefix was three-peaked with decoration in relief dated to the mid sixth century (*figure 16c*).[112]

The date, and hence the function, of this building has been of much debate. Although its plan is typical of other temples in the Argolid, some, such as Blegen, believed it was a Late Helladic rebuilding of the megaron. Blegen argued against the structure being Archaic as he asserted that all Archaic temples were built with fairly thick walls of worked stones.[113] It is of course incorrect that only quarried stone was used on early temples and that walls were comparatively thick and solid. Nevertheless, a considerable problem is posed with regards to an Archaic date by the lack of seventh century pottery at the structure and the exclusive Mycenaean debris level covering the area. As this building was excavated in the early part of the century, it is difficult now to determine whether the lack of seventh century material is due to the fact that it never existed or was never recorded. Despite the lack of Archaic material, almost all subsequent scholars believe it to be an Archaic temple because of its style of construction, the Doric capital, the antefixes, and the votive terracottas from the citadel.[114] The relationship of this building to the Archaic altar, the similarity of the plan with other temples, and the discovery of Archaic architectural fragments strongly suggest the function of this structure was a temple.

As for its precise date, Wright proposed that it was built in the second half of the eighth century while Frickenhaus dated it to the middle of the seventh century.[115] Although the lack of stratigraphy cannot help with the actual construction date, the capital and antefixes were from the late seventh and early

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[111]*Nauplion Museum 17270 and 13564.* Hübner (1975) 118-119, fig. 1, pls. 64.1-3; Jantzen (1975) 128-129, fig. 38.
[112]*Nauplion Museum 17260.* Hübner (1975) 119-120, figs. 2a-b, pl. 64.4.
[113]Blegen (1921) 130.
[114]Blegen (1921) 130; Frickenhaus, Müller, and Oelmann (1912) 2-46.
[115]Wright (1982) 196-197; Blegen (1921) 130; Frickenhaus, Müller, and Oelmann (1912) 2-13, 31-41.

sixth centuries. Therefore the period around 600 BC seems appropriate for the construction or renovation of the structure.

TROIZEN

There are several Archaic sanctuaries scattered around the ancient city of Troizen. The only traces of a temple came from a sanctuary located on the slopes of the mountain, corresponding with Pausanias' description (II.32.5-6) of temples dedicated to Pan or Aphrodite Akraia.[116] The temple foundations were actually of Hellenistic date, although some architectural fragments dated to around the middle of the second half of the sixth century. An antefix was of an elongated pentagonal shape and moulded with palmettes and tendrils; its attached eaves tile was decorated with a guilloche (*figure 16e*).[117] The very well preserved terracotta sima has a lion's head spout and was painted with tongues, a double guilloche, and a double herring-bone; it belonged to the third quarter of the sixth century.[118] A Doric capital fragment has been restored showing it to be from the sixth century (*figure 40e*).

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[116]Welter (1941) pls. 8 and 27; Frickenhaus and Müller (1911) 21-38; Legrand (1905) 269-315, figs. 3-6.
[117]Winter (1993) 180-181; Legrand (1905) 273, fig. 2.
[118]Welter (1941) 19-20, pls. 8a-b, 27; Legrand (1905) 273-274, figs. 3-6.

COMPARISON AND ANALYSIS OF THE EARLY ARCHAIC TEMPLES

INTRODUCTION

There were naturally several limits to this study. First of all, the identification of temples was not always possible, since no systematic excavations were actually performed at some sites. Usually the identification of a building as a temple was based on the nature of the finds and the existence of a later temple. Another problem related to chronology because stratigraphy was not always recorded or published. Finally, some Early Archaic temples must have been destroyed completely or still await to be discovered.

Roof tiles from sanctuaries where no structures have been identified were considered in this study, since the tiles covered edifices which could have been temples. In addition, the tiles help to establish that an Argive roofing system existed as they probably were not limited to temples.

Only a few sanctuaries actually have traces of temples in situ which can be said with some certainty to be temples from the Early Archaic period: the Argive Heraion, Asine, Halieis, Nemea, and Tiryns.

PLANS

There was clearly a pattern for setting temples near Mycenaean settlements. Moreover, where orientation can be determined, most temples faced south. Not including the Argive Heraion, temples' lengths ranged from 9.60 to 20.90 m, the average being 15.50 m.[119] The widths of the temples varied from 4.30 to 6.90 m, the average being 5.22 m. These temples were similar in size to temples in Arcadia and Laconia but not to those in Corinthia. The ratios of widths to lengths ranged from 1:2 to 1:3; the average being 1:2.7. The Argive Heraion temple was much larger being about 16 m by up to 45 m (*figure 15*).

The five temples which are preserved in situ, the Argive Heraion, Asine, Halieis, Nemea, and Tiryns, share many features in common, suggesting that there

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[119]The length of the Halieis temple assumed here is 12.30 m which only includes the pronaos and naos; the two other rooms are not clearly connected with the temple proper and if included, would greatly affect the averages and ratios. But the pronaos and naos measurements fall within the standard range.

was a typical plan in the Argolid of a naos and a pronaos possibly with columns in antis. No opisthodomos or adyton were included on any of the temples. The Argive Heraion's peristyle was the exception to the rule as the majority were not peripteral.

CONSTRUCTION TECHNIQUES AND MATERIALS

The materials used for construction included field stones, worked and quarried stone, mud-brick, terracotta, and wood. Rubble was the most typical material of wall socles except for the temples at Nemea and probably the Argive Heraion whose walls were of worked blocks. The upper parts of walls were built with mud-brick. The roofs were covered with terracotta tiles, for which there was evidence at all sites. Wood must have been employed for doors and their casings, roof and ceiling beams, wall bracing, columns, and entablature. There were traces of painted plaster at Nemea and Halieis; this would have been the best method for protecting the mud-brick walls from the weather. It also created a smooth surface so that the transition between the rubble socle and the mud-brick would have been less apparent.

Temple foundations were not needed at the Argive Heraion, Mycenae, and Tiryns since all three rested on either a built terrace or an existing structure. Elsewhere, a few courses of rubble foundations were laid beneath the walls. At the Argive Heraion paving stones cover the terrace beneath the stylobate blocks; but the rough finish of the lower portion of the stylobate blocks supports the idea that the level of the floor was higher and made of packed earth. The floors were paved at Halieis and Asine; the Tiryns temple may have utilised the floor of the old megaron.

The typical wall was constructed of a rubble socle beneath a superstructure of mud-brick. The socle construction was made of unworked stones with an outer and inner shell filled with a core of rubble and bonded by clay. Walls ranged from 0.60 to 1.20 m in width. Wooden piers may have been used for bracing the mud-brick, a method known as half-timbering. The walls at Nemea and possibly the Argive Heraion were made of dressed masonry. The ashlar blocks at Nemea had anathyrosis, lifting holes, and pry marks. The few with cuttings for wooden

members may have been placed at cornice level as on the Isthmian temple. The stylobate blocks at the Argive Heraion were of polygonal masonry with anathyrosis, U-shaped lifting bosses, and circular cuttings implying that the columns were of timber.

THE DORIC ORDER

A few stone Doric capitals appeared in the Argolid in this early period from the Argive Heraion, Tiryns, and Troizen (*figures 40a-e*). They are among some of the earliest stone Doric capitals in Greece possibly suggesting that the Doric order developed here or nearby. The Argive Heraion capitals may instead have been used on a stoa. The lack of stone bases on the stylobate of the Argive Heraion show that the wooden shafts stood directly upon the stylobate as did later stone Doric shafts suggesting that they could have been wooden Doric. The reuse of the Mycenaean stone bases at Tiryns does not preclude the use of wooden Doric columns there as the wood would have to be set on stone to prevent the timber from rotting.

ARCHITECTURAL DECORATION

Little evidence of architectural sculpture or other adornment has been found. This does not exclude the possibility that sculpture and paintings were produced from wood or other perishable materials. For instance, walls that were covered with plaster to protect the mud-brick and also to create a uniform surface had colourful paintings. The doors at Nemea were covered with bronze sheets. The only possible architectural sculpture were the seventh century relief panels from Mycenae; they may have adorned an early temple as either carved metopes or othostates although there is no direct evidence to support this suggestion.

ROOFS

Although a few Archaic Laconian-type tiles covered buildings at Asine and Halieis, roofs in the Argolid were typically of the Corinthian tile system with flat pan and peaked cover tiles. Those few buildings with Laconian tiles do not appear to have been temples; instead, all the known temples from the Argolid were roofed with tiles from the Corinthian system.

Basically the tiles in the Argolid were like those of the Corinthia, but the Corinthians did not manufacture them and their influence only extended to the form of the tiles. The Corinthian tile system may not have been first manufactured in Corinthia but instead in the Argolid. The earliest known roofs on which they were laid came from the Argolid or from areas under Argos' influence, such as Olympia and Aegina. So-called Corinthian tiles had been used on buildings in Olympia and the Argolid within the second quarter of the seventh century immediately after the Protocorinthian tiles were first laid on the temples at Corinth and Isthmia. However, their first use on Corinthian buildings is not clear; they may not have been used until the last quarter of the seventh century. Even if the Corinthians were responsible for the creation of the tiling system, the Argives took that system, altered it slightly, and developed their own type of antefixes (*figure 17*).

Pan tiles from the Argolid had raised sides, and their fronts were undercut to overlap a lower tile. The fronts of the covers were also undercut to slip over a lower tile. Raking simas were essentially pan tiles with an undecorated plaque along one side as demonstrated at Argos, Berbati, and Halieis.[120] Eaves tiles lining the edge of the roof had upturned sides and were usually unattached to the antefixes. On Argive-style roofs from outside the Argolid, at Aegina, Kombothekra in Eleia, and Olympia, hip tiles were common. Within the Argolid, the only evidence for a temple with a hipped roof was at Nemea, where hip tiles can actually be associated with the temple as they were within its destruction debris. Some of the roof tiles were painted with a red wash, examples of which were at the Argive Heraion, Mases, and Nemea.

SIMAS

In the Early Archaic period, simas were simply pan tiles with a flat plaque along one side with no decoration apart from a coloured wash. It was not until the end of the Early Archaic period, around the mid sixth century, when decoration was added in the form of a moulded torus along the top of the plaque and painted tongues below. Examples of this type of sima were recovered at Mycenae (*Nauplion Museum 17283*) , on the Aspis at Argos (*Argos Museum C9890*), and at

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[120]Winter (1993) 152, 158, 166-167.

the Apollo Pythaios sanctuary at Argos (*Argos Museum C26701*). The Mycenae sima had an additional chequer-board pattern beneath the tongues. All three of these simas were dated to *c.* 560-540 BC based on their similarity to simas found elsewhere.[121] A sima from the third quarter of the sixth century was discovered at Troizen and is now in the Poros Museum. It was unlike the above simas in that it had a different profile, more decoration, an acroterion base, and a lion's head spout. The sima had a cavetto profile whose lip was decorated with upside-down tongues and whose plaque had a row of tongues above a double guilloche. The raking sima jutted out past the line of the flanking sima as a third decorated face was detectable; this third face had painted tongues above a double herring-bone pattern. The existence of the acroterion base reveals that the slope of the pediment was fifteen degrees.[122] It can be dated to the decade of 550-540 BC based on parallels with simas at Delphi.[123]

ACROTERIA

Few acroteria from the Early Archaic period were identified. Unique to Halieis was a Laconian-shaped disc acroterion which crowned the long stoa-like building adjacent to the temple of Apollo. The only corner acroterion was discovered at the Argive Heraion (*Athens National Museum SA293*) and has been dated to the end of the seventh or beginning of the sixth century; it was from a building with a hipped roof and thus probably belonged to one of the stoas. Since no other traces of earlier acroteria have been found, it is impossible to tell if it is the case that they simply have not survived.

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[121]Winter (1993) 159; Billot (1990) 131-133; Hübner (1975) 121. Similar simas with tongues are found at the Athenian Acropolis Museum *c.* 550 BC; *Delphi S3 and S118* of the second quarter of the sixth century [LeRoy (1967) 31-32, pls. 5, 98, and 118]; Archaic temples at Kalapodi [Felsch (1980) 78, 112-113, fig. 101; Hübner (1990) 167-174, figs. 1-2, pl. 16c]. The chequer-board pattern appears on *Delphi LN5 c.* 540 BC and *Delphi S151, S152, S186* all dating to mid sixth century [LeRoy (1967) 48-49, 70-76, pls. 8-9, 21-22].

[122]Winter (1993) 172.

[123]Very similar to the Troizen sima are those from the Megara Treasury at Olympia, the Archaic temple at Kalydon, *Delphi S10-2, S14-6, S166, S203* of the first half of the sixth century [LeRoy (1967) 45-52, pls. 7 and 12]. *Delphi LN5 c.* 540 BC is its closest parallel [LeRoy (1967) 48-49, pls. 8-9].

ANTEFIXES

There were two types of antefixes from the Argolid in the Early Archaic period: three-peaked and decorated pentagonal. The three-peaked variety had actually three sub-types developing from plain undecorated faces, to ones with stamped ornament, to those with moulded decoration. The second antefix type was the elongated pentagon decorated with a palmette and a reversed lotus in relief.

UNDECORATED THREE-PEAKED

Undecorated three-peaked antefixes have been recovered from the Argive Heraion, Halieis, Mases, and Nemea (*figure 16a*). The same type was also found at the Aphaia sanctuary on Aegina, Delphi, Kombothekra in Eleia, and Olympia.[124] The attached cover tiles had either a curved or an angular underside. The tiles from Aegina, the Argive Heraion, and Mases were covered in a red wash, whereas the Kombothekra tiles had a black wash. False antefixes which were placed along the eaves at the corners came from Aegina, Delphi, and Halieis (*figure 17*); at Kombothekra, a double-faced antefix served as a corner antefix/acroterion for a hipped roof.[125]

Their simplicity of design, lack of decoration, and similarity of form to the eaves cover tiles at the Early Archaic temple at Isthmia confirm that this type of antefix was developed fairly early, probably in the mid seventh century. The Olympian tile can be securely dated to *c.* 660-650 BC since it was found in a deposit sealed in the third quarter of the seventh century. The type was still produced eighty years later at the early Aphaia temple on Aegina *c.* 580-570 BC. The majority of this type were made from the last quarter of the seventh through the first quarter of the sixth centuries.

STAMPED THREE-PEAKED

Succeeding the undecorated three-peaked variety were those which had decoration stamped into the tile. The side peaks became rounded and the central peak resembled a palmette finial (*figure 16b*). Stamped channels ran along the

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[124]Heiden (1990) 42, pl. 3b; Schwandner, (1985) 76-77, fig. 47; Sinn (1981) 50, 71, pls. 15.5 and 16.1-2; Stephen G. Miller (1980) 195, pl. 39b; LeRoy (1967) 28, pl. 5.
[125]Winter (1993) 162; N.K. Cooper (1990) 68, fig. 4; Sinn (1981) 71, n.135, pl. 15.7.

edges of the antefixes and formed eyes on the side peaks and volutes within the central finial. Examples of this type were from Argos (*Argos Museum C19249*), Acrocorinth, the Athenian Acropolis, Corinth, Delphi, and Nemea.[126] At Nemea there were dozens of these antefixes with added horizontal stamped channels; they were associated with the Early Archaic temple dated to the end of the first quarter of the sixth century. Generally, these antefixes were produced in the the first and second quarters of the sixth century.

Slightly later examples were from Nemea (*Nemea Museum AT80*), Corinth (*Corinth Museum FA565*), and Tiryns (*Nauplion Museum 17260*) which were all dated to the mid sixth century.[127] The central finial was considerably larger, had five palmette leaves, and had volute spirals that curled into the side peaks (*figure 16c*). The lower portion of the antefixes had horizontal and peak-shaped channels.

The stamped three-peaked antefix was believed by LeRoy to be of Attic origin, by Heiden of Corinthian origin, and by Winter of Argive origin.[128] Its basic form of three-peaks and its early appearance in the Argolid endorses the belief that the type developed here.

MOULDED THREE-PEAKED

The last of the three-peaked variety had moulded decoration (*figure 16d*). All examples were exclusively from the Argolid. They were found at the Apollo Pythaios sanctuary on the Aspis (*Argos Museum*), the Agora at Argos (*Argos Museum 76/1835 and C19109*), the Argive Heraion, and Nemea (*Nemea Museum AT65*). One antefix's provenance is unknown (*Nauplion Museum 17264*).[129] The peaks were pointed like the undecorated variety. All faces had a design in relief of thick stems curving outwards and ending in spirals filled by an eye; below the stems was a reversed lotus without petals. Stems were linked by a narrow horizontal band from which a five-petalled palmette rose. Those from the Argive Heraion and

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[126]*Argos C19249*: Billot (1990) 105-107, fig. 2, pl. 10e-f; *Acrocorinth FA547*: Williams (1980) 348-349, pl. 155; *Acropolis 9667-8*: Buschor (1933) 26-27, figs. 35-36; *Corinth FA24, FA404, and FA547*: Roebuck, (1990) pl. 5; *Delphi A41*: LeRoy (1967) pl. 19; *Nemea AT 82 and 91*: Miller (1980) pl. 38a,e, 39b.
[127]Winter (1993) 164 n.31; Hübner (1975) 119-120, fig. 2a-b, pl. 64.4.
[128]Winter (1993) 163; Heiden (1987) 35-36; LeRoy (1967) 64-65.
[129]Hübner (1975) 120-121, fig. 3a, pl. 64.5-6.

Argos were practically identical. There were no similar antefixes from outside the Argolid, and thus this type of antefix appears to be unique to the Argolid, particularly concentrated at Argos and its sanctuaries.

These antefixes dated from the middle to the second half of the sixth century and would have adorned Late Archaic buildings.

PENTAGONAL

The elongated pentagonal-shaped antefixes were decorated with palmettes and tendrils in relief (*figure 16e*). They were actually still three-peaked except that the sides between the peaks were now straight. So, like other Argive antefixes their form mirrored the peaked cover tiles to which they are attached. A relief border followed the outlines of the antefix except at the bottom where it rose to a central peak as if on a three-peaked antefix. Within this, two tendrils swept outwards into volutes at the sides. The two tendrils were linked by a horizontal band above which was a semicircular band from which petals radiated. These antefixes were generally attached to a decorated eaves tiles with a guilloche design.

This type of antefix was very common in Corinthia as discussed in chapter one (*figure 12*); examples from Aegina, Corinth, and Delphi are all dated to *c.* 590-560 BC.[130] The earlier Tiryns antefix (*Nauplion Museum 13564*) was comparable to antefixes dated by LeRoy to *c.* 600-590 BC.[131] The Troizen antefix was more ornate than the Tiryns one so LeRoy dated it after *c.* 560 BC.

CONCLUSION ON ROOFS

The local Argive system dated from about 660 to 480 BC and can be identified with roofs at the Argive Heraion, Halieis, Mases, Nemea, and an early roof from the sanctuary of Aphaia on Aegina. It is accordingly known as the Argolid-Aegina system. This type of roof had Corinthian type flat pan and peaked

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[130]The example from Ptoion reconstructed by LeRoy (1967) pl. 118 was almost exactly like the one from Troizen which he dates to *c.* 590-560 BC along with those from *Corinth FA446*: Robinson (1962) 114, pl. 41e; Perachora: Payne (1940) 113-115, pl. B2 who dated it to second quarter of seventh century; *Delphi A4*; and Corinth. Similar examples were found at Orchomenos in Boeotia, the Athenian Acropolis, and *Corinth FA543*.

[131]*Aegina*: Furtwängler (1906) pl. 48.2 and *Delphi A3, A9, and A171*: LeRoy (1967) 33, 43, pls. 5-6. LeRoy (1967) 33-37 placed them to the same period and type as the Tiryns antefix dating them to *c.* 600-590 BC.

cover tiles which were separately made. The roofs had a red slip as documented at four sites. Winter characterised the roof type as having a hipped end, but the only hip tiles were from Nemea. The pediment was framed by an undecorated raking sima with a flat plaque until about 550 BC when painted tongues were added. Antefixes were not attached to the eaves tiles and had three peaks with a bottom edge matching the upward curves of the tiles upon which they sat. The antefixes developed from undecorated faces to those with stamped designs of a palmete and volutes. Basically the Argive system was of an undecorated roof until well into the sixth century (*figure 17*).

Until about 550 BC, the only Early Archaic evidence for another type of roof besides the Argive system consisted of a few antefixes of pentagonal shape. Perhaps there really was not a new system but a derivation of the three-peaked antefixes where the sides are straightened. Moreover, only two antefixes from this system were found within the Argolid. It may be that those few early examples at Tiryns and Troizen were influenced or produced by a Corinthian. The earliest known antefixes of this type outside of Corinthia were from Aegina. Subsequently, the style was then adopted around the Saronic gulf from the Argolid to Attica.

The Argive style lasted until the third quarter of the sixth century when a new one developed in the Late Archaic period. It may be concluded that the constant theme present in the four types of Early Archaic antefixes was the use of a three-peaked form.

CONCLUSION

A pattern for Early Archaic temples in the Argolid is detectable as many of their characteristics were similar, some of which were unique to the Argolid. One very important feature was the reuse of structures eliminating the need to build foundations, such as the palaces at Mycenae and Tiryns and the Geometric terrace at the Argive Heraion. Locating historic cults at Mycenaean sites was a characteristic of how religion in the Argolid was practised. Moreover, the early representation of the stone Doric order at the Argive Heraion, Tiryns, and Troizen may indicate that the Argolid played a role or was in the forefront of its development.

Orientation of most temples was to the south. The temples were fairly small except for the Argive Heraion which had the only known peristyle. The typical plan of an Early Archaic temple in the Argolid was of a pronaos and a naos; no adyta or opisthodomoi were identified.

Materials typically used were unworked stones, mud-brick, terracotta, and wood. Walls were generally of mud-brick set on a rubble socle of an inner and an outer facing filled with a rubble core. Worked masonry was found only at the Argive Heraion and the temple at Nemea.

Roofs were made of Corinthian-type tiles. The roofs usually had gables rather than hips; acroteria did not crown the peaks. Although a variety of antefixes has been found, the most common was the three-peaked. They were originally unadorned and then eventually decorated with moulded or stamped motifs. The earliest roofs were fairly plain, both the antefixes and the sima having no embellishing designs; decorative features were not added until the first quarter of the sixth century and then limited to the antefixes.

CHAPTER THREE: ARCADIA

There have been three principal commentaries on Arcadian Archaic temples by Jost, Østby, and Voyatzis.[132] There were a great number of Arcadian sanctuaries active in the Early Archaic period, many of which had temples (*figures 18-19*). Those temples whose remains have survived include Bassae, Gortsouli, two at Kotilon, three at Pallantion, and Tegea. Some of the other sanctuaries may not actually have remains of temples in situ, but other architectural features, for example roof tiles, revetment, and Doric capitals, indicate buildings had existed. At Alipheira, Boreion, Lousoi, Orchomenos, Palaeopyrgos, Petrovouni, and Tzemberou architectural terracottas found within the vicinity of later temples suggest that those temples had predecessors; thus, this study will include those sites. A few other sanctuaries, Cretea and Nea Ekklisoula,[133] have evidence of structures, but neither their dates nor their functions are certain.

The transition between the Early Archaic and the Late Archaic temples was distinguishable by the latters' customary use of worked marble blocks, stone Doric elements, and a peripteral plan. It is nearly impossible to determine the exact date when the transition happened but it appears to have been in the mid sixth century.

Permission was obtained to view material from every site except for Bassae. All attempts were made to see architectural fragments in the museums, but since much of that material was excavated over half a century ago, their present locations are unknown. Nevertheless, every site was studied at first-hand.

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[132]Østby (1991) 41-54; Voyatzis (1990) 10-48; Østby (1986) 75-102; Jost (1985).

[133]At Cretea on Mount Lykaion, Kourouniotes (1910) 29-36 and (1903) 51-52 excavated a structure which he identified as the temple of Apollo Parrhasios described by Pausanias (VIII.38.2, 8). Jost (1985) 185-186 doubted this since neither the nature of the remains nor their location corresponded with Pausanias' description; the sanctuary may instead have been that of Zeus (Pausanias VIII.38.6-7). Several structures were found at the site. Ancient blocks were built into a church which lies upon an ancient foundation with a north to south orientation; other fragments of architecture were found in its vicinity. Additionally, large walls found in the excavation to the east of the church may instead be foundations of a temple. A few metres to the south of the church were the remains of a small room where many small bronzes were discovered including an Archaic bronze figurine. Roof tiles were found around the site and in the embankment of a terrace with charred debris and Geometric sherds. No date has been set for these structures, but to judge from the evidence of votives, the sanctuary was probably established in the Late Geometric period.

At Nea Ekklisoula near Megalopolis a wall approximately 15 m long was preserved. It was believed to be part of the foundations of an Archaic temple. A votive deposit had miniature vases and weapons of the late seventh through the sixth century. Megaw (1962-3) 17; Karageorga (1961-2) 86-88, fig. 1.

REMAINS AT SITES

ALIPHEIRA

At Alipheira in the mountains of western Arcadia, an early fifth century temple stood on a summit belonging to Athena (*plate 16*) as mentioned by Pausanias (VIII.26.6). In addition to its remains, there were a few terracotta antefixes which did not belong to it and seem to have been from an earlier structure, presumably an earlier temple. The cult was established at the end of the eighth or beginning of the seventh century from the evidence of the votives found in and around the temple.

EARLY ARCHAIC REMAINS

Terracotta semicircular antefixes with moulded and painted gorgon faces (*figure 23a*) were the earliest architectural remains at the site, dated to around 550 BC by the excavator Orlandos.[134] Winter actually assigned these antefixes to the Late Archaic temple as archaizing features.[135] However, there were marble antefixes found in great quantity that would have decorated the marble tiled roof of the Late Archaic temple as would have the marble ridge acroteria. Instead the gorgon antefixes were from a Laconian type roof belonging to an earlier building whose additional remains have not yet been recovered.

BASSAE

Pausanias (VIII.41.7-9) recorded a temple for Apollo Epikourios at Bassae on Mount Kotilion. The cult seems to have begun in the late eighth or early seventh century, but it does not appear to have flourished until after the mid seventh century judging from the sudden increase of votives. The extant temple belonged to the Classical period. Remains of two earlier temples have been located; the one from the Late Archaic period lies beneath the Classical temple. F.A. Cooper proposed that there were three Archaic building phases, two of which belonged to the earlier part of the Archaic period.[136] He thought the roof of the seventh century temple was replaced by another in the beginning of the sixth century based on the existence

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[134]Orlandos (1968) 13 and 78, fig. 52. The diameter of the antefixes was 0.23 m.
[135]Winter (1993) 144.
[136]F.A. Cooper (1978) 71.

of two sets of Early Archaic roof tiles distinguished solely by the use of a different fabric (fine yellow versus red gritty clay). No other evidence for another temple from the early sixth century existed.

EARLY ARCHAIC TEMPLE [137]

The foundations, measuring *c.* 7.50 x 24 m, of the earliest temple are located to the south of the Classical temple (*plate 17*). This north facing building had three rooms - a cella, an adyton, and probably a pronaos (*figure 20b*).[138] An extension of the walls about 2.50 m beyond the rear cross wall also possibly indicates the existence of an opisthodomos. Unfortunately the foundations were not sufficiently preserved to determine whether or not there was a door in the east wall as in the Classical temple. It also cannot be determined if there was a row of internal columns. The walls, approximately one metre wide, comprise a roughly worked stone socle most likely topped by mud-bricks. Three small stone columns cannot be securely assigned to this temple. The columns had a diameter of 0.30 m and preserved height of 0.60 m; the columns had flanges projecting from them which N.K. Cooper interpreted as a feature consistent with being added later to the interior.[139]

The only certain remains of the superstructure were roof tiles and revetments. Laconian tiles, antefixes decorated with heraldic sphinxes, and large acroterion discs were recovered from the site (*figures 23b, 25a, and 25b*). No remnants of a raking sima have been identified. All the pan, cover, ridge, and geison tiles had a black or red wash and were of two types of fabrics. Tiles of both fabrics were of the same shape and size. In addition, one set greatly outnumbered the other and appeared much more worn implying that one set was used for repairs. Rhomaios and Van Buren considered the yellow, finer-grained tiles as the first or original roof whereas F.A. Cooper, N.K. Cooper, and Voyatzis deduced that the red, coarser fabric tiles covered the original roof since they were more worn and

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[137]Yalouris (1979) 89-104: F.A. Cooper (1978) 70-71, 196-201; Yalouris (1973) 39-55; Parlama (1971) 142-146, fig. 2; Yalouris (1965) 155-159; Yalouris, (1960) 106-109; Rhomaios (1933) 1-25; Kourouniotes (1910) 271-332.

[138]Length of rooms: pronaos *c.* 5 m; naos *c.* 10 m; adyton *c.* 6 m.

[139]N.K. Cooper (1990) 93.

greatly outnumbered the others.[140] If the finer-grained tiles replaced lost or broken tiles on the roof, it would have accounted for their smaller numbers and better state of preservation. One set of roof tiles should thus be seen as replacements to the original roof perhaps as a result of storm damage.

The semicircular terracotta antefixes were bell-shaped with a flat bottom and a recessed border outlining the entire shape (*figure 23b*).[141] The lower portion had moulded and painted heraldic sphinxes, and the upper portion had a small moulded palmette finial. Antefixes of both fabrics were recovered with a slight variation in their decorative detail. The finer fabric antefixes had fewer filling ornaments, no recessed border, and a slightly smaller size. A piece of the red, coarse fabric antefix was discovered in a deposit of around 600 BC signifying that a portion of the roof was destroyed at the turn of the century and that this section was repaired with the fine-grained tiles and antefixes.[142]

One of the disc acroteria, known as 'A', was similar to the one from the Heraion at Olympia having the same decorative patterns, namely scales, pomegranates, tongues, and dentils (*figure 25a*). This large disc has been dated to the first quarter of the sixth century based on the pomegranate frieze and its style in relation to other similar discs.[143] The other disc, known as 'B', had a diameter of 1.08 m, bold and coarse mouldings, and has been dated to the last quarter of the seventh century (*figure 25b*).[144]

The temple was most likely built in the last quarter of the seventh century judging from the style of the roof revetment and the associated finds. A phase of repair, also based on the style of roof revetment, may be placed in the first quarter of the sixth century.

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[140]Voyatzis (1990) 41; N.K. Cooper (1989) 101-102, 106-7; F.A. Cooper (1978) 196-201; Rhomaios (1933) 2; Van Buren (1926) 18-19.
[141]Yalouris (1973) figs. 14-16; Yalouris (1965) pl. 134c; Rhomaios (1933) figs. 6-7; Kourouniotes (1910) figs. 4-5. The antefixes were *c.* 0.31-3 m wide by 0.25 m high.
[142]Yalouris (1965) 156.
[143]Winter (1993) 138-139; Rhomaios (1933) figs. 1-2, pl. 1. Rhomaios approximated its diameter to be 1.45 m, but Winter believed it was smaller being only 1.06 m. Winter also dated this disc to *c.* 570 BC.
[144]Winter (1993) 138; Kjellberg (1940) 131-132; Rhomaios (1933) fig. 3, pl. 3.

BOREION

There were two Archaic temples built over one another located on the summit of Mount Boreion at Vigla near Asea. The extant temple was from the Late Archaic period and built entirely of marble. Originally dated to *c.* 570-540 BC based on the style of the geison blocks and palmette finials, it has recently been down dated to *c.* 520-510 BC judging from the style of its Doric remains. The altar was located to the north of the temples and appears to have served both of the temples.

The pottery and bronzes from the site show the sanctuary existed from the end of the seventh century. Ties with Sparta are suggested by the Laconian style antefixes and metal sheet figures extremely similar to those from Laconian sanctuaries, notably that of Artemis Orthia in Sparta. The excavator Rhomaios believed these were the temples dedicated to Athena Soteira and Poseidon mentioned in Pausanias' account (VIII.44.4). Although a few scholars have challenged this identification, the sanctuary matches well with the description of the location. In addition, bronze and iron tridents, usually associated with cults of Poseidon, were discovered in the strata of the older temple.

EARLY ARCHAIC TEMPLE[145]

Underneath the Late Archaic temple, Rhomaios discovered a structure which he dated to around 630-620 BC. He says it was a small temple made of wood and clay. The remains were too poorly preserved to determine its plan or construction techniques. Although no architectural remains have been found in situ, the early architectural terracottas indicate an early temple had existed. The location of the altar, whose deposit dates back to this period, indicates the early temple presumably had the same north to south orientation as the later one.

The architectural terracottas presumably belonged to this temple and may be dated to the last quarter of the seventh century, although the variety of material suggests that either building had more than one roof during their life. The roof tiles were of Laconian shape. The antefixes were incised and painted with lunulae as were those at the temple of Artemis Orthia in Sparta (*figures 23e-f*). Usually these

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[145]Daux (1959) 625-628, fig. 18; Rhomaios (1957) 114-119, figs. 3-14.

antefixes were semicircular, but at least one was elliptical so one shape presumably replaced the other. The elliptical antefixes, *c.* 0.30 m wide, were restored as being slightly smaller than the semicircular ones which were *c.* 0.33 m wide. There were a number of small incised and painted palmettes broken off at the bottom similar to antefix finials from Bassae (*figure 24 and plate 18*). These were originally identified as whole antefixes, but as they are very small, only measuring 0.12 x 0.12 m, and clearly broken off a lower section, they should instead be seen as the finials of antefixes (*figures 23b-c*). They were unlikely to have crowned the lunulae antefixes but could have formed a part of the antefixes made for a replacement roof later in the Early Archaic period. The palmette-type antefix finials were made in the Early Archaic period and thus presumably were not created for the Late Archaic temple.

The disc acroterion had dentils, moulded tori covered with a black wash, a fascia with painted tongues, and a diameter of 0.40 m (*figure 25c*). A piece of a terracotta sima with patterns of white dots in the form of 'T's and 'I's had a height of 0.10 m. A geison with a tongue pattern has also been preserved, although it is too difficult to determine which temple it decorated. Winter reconstructed a roof with the sima along the pediment and the geison along the flanks but not with the sima on top of the geison as first proposed by Rhomaios.[146] Although Rhomaios and Winter hypothesised that the palmette finials, the raking sima, and the geison tiles may have decorated the facade of the Late Archaic marble temple, they may instead have adorned the first temple either on its original roof or a replacement.

GORTSOULI

On the hill of Gortsouli, one km north of Mantinea, a sanctuary stood on its summit. Karageorga, the excavator, believed it was the ancient city of Mantinea, called Ptolis by Pausanias (VIII.8.1, 9.2, 12.5-7).[147] Papachadzis thought it was the location of Penelope's grave and the sanctuary was in honour of her.[148] Jost believed the Gortsouli summit corresponds with Pausanias' description of the

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[146]Winter (1993) 140 and 145.
[147]Karageorga (1963) 88-89, fig. 1.
[148]Papachadzis (1980) 219-221.

sanctuary of Artemis (VIII.12.5).[149] Similarly, Voyatzis associated the sanctuary with a Fertility Goddess or Mistress of Animals based on her analysis of the votives.[150] Votives from the sanctuary consisted of many terracotta female Archaic figurines and pottery from the Subgeometric to the Classical periods.

EARLY ARCHAIC TEMPLE(S)

The sanctuary has two sets of foundations one enclosed within a larger one (*figures 20d and 21*).[151] The larger structure measured 6.50 x 16.50 m and faced south. The walls, whose thickness is 0.65 m, are of rubble and probably supported a mud-brick superstructure. The enclosed smaller structure, also facing south, measured 4.90 m wide by at least 6 m long and had slightly deeper foundations than the outer walls so these inner foundations were probably part of an earlier structure. In the eastern corner of the larger edifice there was paving which may have belonged to the earlier, smaller structure. As for roof tiles and revetment, the only excavation report mentions tiles as among the finds but no description or date was given for them. Archaic roof tiles of the Laconian type with a black wash can be seen lying around the temenos even today.

Mazarakis believed there was only one structure, the inner walls being part of the larger temple.[152] He considered the inner side walls as benches and the interior rear wall as a cross wall separating the cella from an adyton. He claimed the width of 0.35 m for the inner walls was too narrow for exterior walls. On the other hand, Karageorga believed the inner walls were the remains of an earlier structure. In support of her view, it should be noted that these inner walls are not set against the outer walls as they would have been if they were benches (*plate 19*). Also, they had deeper foundations than the exterior walls which would not be expected if they were benches. Furthermore, Voyatzis pointed out that the inner rear wall ended 0.30 m before reaching the larger building's side walls.[153]

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[149]Jost (1985) 137.
[150]Voyatzis (1990) 32.
[151]Karageorga (1963) fig. 1.
[152]Voyatzis (1990) 32 n.144.
[153]Voyatzis (1990) 32.

Therefore, the original deduction of Karageorga for two separate temples is the most plausible solution.

The walls of the larger temple were found in a thick sequence of finds dating from the Geometric period through to the Hellenistic period. Karageorga placed the earliest temple in the Geometric period, but Mazarakis and Voyatzis proposed a late seventh century date on the basis of votives which were largely from the seventh and sixth centuries.[154]

KOTILON

Overlooking Bassae were two small Archaic temples from the Kotilon sanctuary, one for Aphrodite and the other possibly for Artemis.[155] The two temples apparently escaped replacement and major modification throughout their period of use. When Pausanias (VIII.41.10) visited the temples, he observed that one of the roofs had caved in and its cult statue was gone, but he did not mention the other temple. Both temples were originally dated to *c.* 625 BC based on an antefix discovered there and on the date of the nearby Bassae temple. However, Voyatzis pointed out that dedications at Kotilon do not start until the sixth century, and thus the temples were likely to be later than the Bassae temple.[156] The terracotta antefix with heraldic sphinxes (*figure 23c*) from Kotilon was so similar to those from Bassae that F.A. Cooper believed the Bassae temple and the largest Kotilon temple had been identically decorated, were of the same size, and were constructed at the same time as part of the same building project.[157] His argument centred around his belief that the Kotilon antefix was cast from the same mould excavated from Bassae, but as Voyatzis observed the Kotilon piece was of the other, later type.[158] Voyatzis did not agree with a joint building project and instead insisted the Kotilon temple was from the sixth century.[159]

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[154]Voyatzis (1990) 254; Karageorga (1963) 89.
[155]Kourouniotes (1903) 151-188.
[156]Voyatzis (1990) 42.
[157]F.A. Cooper (1978) 70-71; Kourouniotes (1903) fig. 4.
[158]Voyatzis (1990) 40-41; F.A. Cooper (1978) 68, 196-201.
[159]Voyatzis (1990) 41-43.

KOTILON A[160]

The foundations of the larger Kotilon temple still exist measuring 6.80 x 15.60 m and with a southern orientation (*figure 20e and plate 20*). The temple had only a pronaos and a cella; it did not have an opisthodomos, an adyton, an interior colonnade, or a peristyle. The pronaos and naos were about 4.00 m and 9.00 m long respectively. The wall foundations are of rubble, and so the walls were most likely constructed of mud-brick on a roughly worked stone socle that was approximately 0.80 m wide. The cult statue base stood in the centre of the interior. Next to the foundations of the edifice, curved Laconian type roof tiles with a black wash can still be seen.

KOTILON B[161]

All traces of the smaller temple, which faced east, have disappeared since excavation, but the measurements were noted as 5.74 x 9.25 m (*figure 20c*). It had a pronaos, *c.* 2.50 m long, and a naos, *c.* 4.50 m long. Like the other Kotilon temple, the foundations of the walls were of rubble with a width of about 0.70 m, it was not peripteral, and it had a stone cult statue base preserved in the centre of the cella.

LOUSOI

The sanctuary and temple of Artemis Hemera were attested by Pausanias (VIII.18.7-8) at Lousoi. A structure earlier than the extant Hellenistic temple is believed to have existed in the same location from the evidence of architectural terracottas and cult statue fragments recovered in the sanctuary which do not belong to the later temple.[162] The cult was established in the Geometric period judging from votives and pottery.

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[160]Kourouniotes (1903) fig. 3, pl. 11.
[161]Kourouniotes (1903) fig. 2, pl. 11.
[162]Mitsopoulos-Leon and Glaser (1988) 14-18; Reichel and Wilhelm (1901) 8-15 and 61.

EARLY ARCHAIC REMAINS

Disc acroteria and antefixes from the seventh and sixth centuries survived. A segment of a small terracotta disc acroterion with a dentillated edge was dated to the late seventh or early sixth century (*figure 25d*).[163] It was decorated in relief with zones of gadroons and tori, but its diameter was only 0.37 m. As for the antefixes, a small palmette similar to those found at Boreion and Bassae was recovered (*figure 24*); this palmette probably functioned as the others did, as the finial to a bell-shaped antefix. A semicircular terracotta antefix with long moulded tendrils and a moulded palmette was from the sixth century (*figure 23d*).[164] Only half of it was preserved so it is not clear whether it was topped with the small palmette finial.

The architectural terracottas indicate an earlier structure may have been erected around 600 BC. Although no walls from the earlier temple were found, the need for shelter for the sixth century cult statue and the existence of the architectural terracottas makes it likely that an older temple existed at the same location as the Hellenistic temple.

MANTINEA

A temple of Poseidon Hippios was situated near the city of Mantinea according to Pausanias (VIII.10.2-3). No excavations were performed in the area thought to contain the temple, but an Archaic Doric capital was found. It is 0.49 m wide by 0.22 m tall and has a very early profile (*figure 41e*).[165]

ORCHOMENOS

Pausanias mentions several temples in both the upper and lower city of Orchomenos (VIII.13.1-2). In the lower city, the earliest architectural evidence dates to the late seventh or early sixth century.

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[163]Winter (1993) 140; Reichel and Wilhelm (1901) 61-62, fig. 128.
[164]Mitsopoulos-Leon (1990) 163-166, fig. 1, pl. 14; Mitsopoulos-Leon and Glaser (1988) fig. 5; H.W. Catling (1987-8) 24, fig. 19. The antefix can be reconstructed as *c.* 0.22 m wide by 0.13 m high.
[165]Fougères (1898) fig. 105.

EARLY ARCHAIC REMAINS[166]

A dentillated acroterion and votives from the seventh century presuppose that an earlier structure preceded the Late Archaic Hekatompedon. Unfortunately, systematic excavation did not occur and the publication was extremely brief so there is no other evidence for an early temple.

PALAEOPYRGOS

From the Mycenaean site of Palaeopyrgos near Orchomenos, several antefixes are now housed in the Tripolis Museum.

EARLY ARCHAIC REMAINS

The antefixes are small incised palmettes similar to those seen at Bassae, Boreion, and Lousoi. In addition, a semicircular disc with black and purple lunulae was also discovered (*figure 23g*). At the site, a very small structure is marked 'Archaic temple' consisting of rubble walls; the structure seems to have had one room and possibly a porch (*figure 20i*).

PALLANTION

The city of Pallantion and its acropolis was visited by Pausanias (VIII.44.5-6). Upon the acropolis four temples have been excavated, but their deities were unknown even to Pausanias.[167] All were from the Geometric and Archaic periods, faced east, and had unknown deities. Temple D and the second construction phase of temple C belonged to the later part of the Archaic period.

TEMPLE A[168]

This structure is identified as a temple by the religious character of the objects recovered within it (*figure 20j*). This, the oldest temple, was a simple, rectangular building (6.10 x 9.20 m) with no inner divisions. The location of the entrance was off-centre in the southern corner of the east wall; there was possibly

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[166]Van Buren (1926) 152 and 181; Blum and Plassart (1914) 81-88; Karo (1914) 160-161; Hiller von Gaertringen and Lattermann (1911) 26-29, pls. 1-2.
[167]Østby (1991) 41-54; H.W. Catling (1984-85) 22-23; Libertini (1939-40) 225-230.
[168]Østby (1991) figs. 1-2.

another opening in the southern wall. The walls and foundations, being 0.45 m wide, were of rubble with large, roughly worked stones anchoring the corners and openings in the walls. The north wall, which faces the upper slope, was twice as thick as the other walls (0.85-90 m) undoubtedly to act as a retaining wall. Two square bases, one of which was an altar or hearth, stood in the interior. This internal altar or hearth may relate the building with the so-called hearth temples of the Geometric period. Østby dated this structure to the seventh century based on construction techniques and plan; but it could just as likely have been built in the eighth century as were most hearth-temples.

TEMPLE B[169]

This temple was narrow, measuring 4.20 x 10.00 m, and had two rooms (*figure 20g*). The cella had a length of 6.24 m while the adyton's length was 2.08 m. The rear room, probably an adyton, had a foundation for a bench or shelf, whose width was 0.50 m, along the inside of the dividing wall. The passage between the adyton and the cella was along the northern wall. The location of the entrance on the eastern facade is not known for certain due to poor preservation. Poor preservation of the eastern foundations is also responsible for the difficulty in detecting a pronaos. The temple walls, 0.52 m wide, were of rubble supported by large limestone slabs at the corners and along the front wall; the inner dividing wall was 0.64 m wide. The actual date of the temple is not known, but votives of the sixth and fifth centuries and the construction techniques and plan of the building places the temple in either the second half of the seventh or the early part of the sixth century according to Østby.[170]

TEMPLE C[171]

The largest temple at Pallantion had two phases of construction, the first of which consisted of a long, narrow cella building dating to the early sixth century (*figure 20f*). The cella had a width of 5.20 m, a preserved length of approximately

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[169]Østby (1991) figs. 1 and 3.
[170]Østby (1991) 47.
[171]Østby (1991) figs. 1 and 4.

13.00 m, and a projected length of about 17.68 m. The eastern front of the temple has been destroyed so the existence of a pronaos is unknown. It clearly did not have an opisthodomos, although Libertini reconstructed one. The long cella was divided into two spaces by the cult statue base and a pair of wooden columns on stone bases about five metres from the rear wall (*plate 21*), thus visually defining a rear space which may have served as an adyton. It is important to stress that the columns were not primarily used as supports, but as space dividers or even to create a backdrop for the cult statue, a forebearer to the arrangement of columns behind the cult statue in the cella of the Parthenon.

The cella walls, *c.* 0.80 m wide, are of unworked stones with larger carved corner blocks in the west end of the cella; the socle was topped with mud-bricks. There are no traces of an entablature so they may have been made of a perishable material, such as wood. Archaic roof tiles discovered around the site are Laconian in style.

Three levels of the floor were distinguished in the cella. The first was of beaten earth and was revealed a few cm below the column bases. A second pavement of the same material was laid on top and reached the level of the column bases. In the last stage, the floor was laid with terracotta tiles covering the column bases. A seventh century Corinthian louterion embedded in the first pavement provided a terminus post quem for this pavement and hence for the construction of the temple. Meanwhile, objects dated to the late seventh and early sixth century resting on the first floor surface or embedded in the second floor indicated when the second floor was laid which seems to have coincided with the erection of the terrace or stylobate foundations. The terracotta floor tiles were of a much later date since a small Hellenistic lamp was discovered under one of them.

The stylobate, measuring 11.65 x 25.75 m, was added later *c.* 500 BC around the cella, although a colonnade was never actually built. The cella walls and the stylobate were from different periods as is evident by their different construction technique; the stylobate is made of polygonal masonry with anathyrosis. The plan of a cella surrounded by an open rectangular terrace was also used at the small, roughly contemporary temple at Kombothekra in Eleia. At Pallantion, however, Østby did not believe this was the original intention since he considered the shape

and dimensions of the stylobate suitable for a typical Archaic colonnade arrangement of 6 x 13 columns. The abandonment of this plan was caused perhaps by a change in the economic or political situation of the city.[172] When the last of three floors was laid in the Hellenistic period, the tile pavement was joined to the blocks of the exterior stylobate, showing that no peristyle had been built and there were no plans in the future to build one. For these reasons, Østby connected the second pavement level with the construction of the stylobate, which was evidently intended to support an external colonnade as an additional embellishment to the cella; he dated this addition and second floor level to the last quarter of the sixth or first quarter of the fifth century.[173] Another coarse wall of irregular-shaped stones crosses the stylobate and runs alongside the rear cella wall; it covers the terracotta pavement and must consequently be later than it.

The date for the construction of the temple was in the first half of the sixth century based on the Corinthian louterion, while the stylobate addition appears to date a century later.

PETROVOUNI

The deity associated with the temple lying outside the city walls of ancient Methydrion has been identified as Poseidon Hippios. This view is widely accepted, although Pausanias (VIII.36.2) said the temple was located in Methydrion. Jost and Papachadzis however maintained the sanctuary was for Poseidon since it was close enough to Methydrion and Pausanias' description of the city was rather vague.[174] A small bronze group of figures with horse-like heads helped to support the identification as Poseidon Hippios, although Hiller von Gaertringen and Lattermann believed the sanctuary was dedicated to the Ram god Hermes and to Hekate because the heads looked more ram-like.[175]

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[172]Østby (1991) 50.
[173]Østby (1991) 49.
[174]Jost (1985) 215-216; Papahatzis (1980) 328 n.2.
[175]Hiller von Gaertringen and Lattermann (1911) 24-25.

EARLY ARCHAIC REMAINS[176]

The extant structure at Petrovouni is a poorly preserved Hellenistic temple, measuring 8.20 x 16.40 m, built on an earlier foundation with an eastern orientation. The Hellenistic plan with a pronaos and cella may have been a reflection of the Archaic one (*figure 20h*). A small disc acroterion from the seventh century had a diameter of *c.* 0.31 m, a dentillated edge, and moulded leaves and tori (*figure 25e*). Winter listed two discs with those features; one was larger and found to the east of the temple.[177] A cornice with a hawksbeak profile and painted tongues perhaps dated to the end of the seventh or the beginning of the sixth century was also recovered.

Rhomaios dated the earlier temple to the end of the sixth century but Callmer and Van Buren assigned it to the end of the seventh century based on the architectural terracottas.[178]

TEGEA

Although the foundations for the Archaic temple of Athena Alea have been exposed for about a century, it was not until the late 1970's that Østby identified the remains as being the temple that was the predecessor of the famous fourth century temple by Scopas. Pausanias (VIII.4.8) traced the sanctuary back to Aleos, the mythical founder of the city. He explained (in VIII.46.5) that a large cult statue of wood and ivory was made for this sanctuary by Endoios, an Attic sculptor who worked in the second half of the sixth century. The statue was housed in a large temple destroyed by fire in 395/4 BC and later replaced by the Scopas temple (Pausanias VIII.45.4-7). Its destruction by fire is corroborated by the traces of burning on stylobate blocks. Although Pausanias does not state when the Archaic temple was built, he implies that it was after Aleos' reign but preceded Endoios' activity as a temple was needed to house the cult statue.

Two Geometric apsidal temples have recently been excavated by Østby within the Classical and Archaic cellae.[179] It is with one of these structures that

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[176]Rhomaios (1957) 119; Rhomaios (1952) 7; Callmer (1943) 11; Hiller von Gaertringen and Lattermann (1911) 31-37, figs. 7-11, pls. 4, 9-10; Fougères (1898) 102-107.
[177]Winter (1993) 140.
[178]Rhomaios (1952) 7; Callmer (1943) 11; Van Buren (1926) 77 and 180.

Aleos may instead be associated. As the larger, Late Geometric temple was destroyed during the first half of the seventh century and the Archaic temple was not erected until the late seventh century, an intervening temple may have existed. A stone platform, which cannot be associated either with the Archaic temple or possibly with the Late Geometric temple, may be the remains of a temple in use during the middle of the seventh century.[180]

EARLY ARCHAIC TEMPLE[181]

The remains of the Archaic temple are principally in situ except for a number of worked marble blocks reused in the fourth century foundations. Østby identified two rows of foundations within the Classical cella as those for the earlier structure with which these reused blocks could be associated (*plate 22 and figure 20a*). Four marble stylobate blocks with markings for columns are preserved upon those foundations (*plate 23*). Furthermore, in the Classical opisthodomos are traces of a toichobate (*plate 24*).

The interior colonnade foundations, being about one metre wide, are composed of crudely carved conglomerate blocks resting on smaller unworked field stones. The upper surfaces of the foundation blocks have slight depressions and elevations in which are set marble stylobate blocks. Four marble stylobate blocks with circular depressions 0.54-5 m in diameter and an interaxial spacing of 2.79-80 m were discovered in situ for internal columns (*figure 22a*). The markings indicate the presence of two parallel colonnades, the level of the cella floor, and the distance between colonnades as 4.92 m. Each column marking has a trapezoidal cutting outside the circular setting line and a square hole within the depression similar to those at the Heraion in Olympia (*plate 23*); they are for levering the columns into place and then securing them with dowels. In addition, parts of the surface of the stylobate blocks have noticeable, seemingly randomly placed, chisel marks which may have been done after the temple's destruction. It is uncertain whether these

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[179]Østby, Luce, Nordquist, Tarditi, and Voyatzis (1994) 89-107, 140-141, figs. 7-16; French (1993-4) 18; id. (1992-3), 20-21; id. (1991-2), 17-18.
[180]Østby, Luce, Nordquist, Tarditi, and Voyatzis (1994) 139 and 141.
[181]Østby, Luce, Nordquist, Tarditi, and Voyatzis (1994) 94-99, 103, 111-115, 139, figs. 2-5; Voyatzis (1990) 46-47; Østby (1986) 75-102; Østby (1984) 118-124; Dugas (1921) 335-435; Rhomaios (1909) 302-319; Mendel (1901) 256-257; Dörpfeld (1883) 284.

interior columns were of stone or wood, although wooden ones would help explain the absence of every trace of them and perhaps the need for dowel holes, levering marks, and depressions.

The anathyrosis channels on the toichobate blocks (*plate 24 and figure 22b*) at the rear of the building show that the space was enclosed rather than open; therefore there was no opisthodomos but possibly an adyton. Furthermore the north-western corner of the building establishes the width of the cella as *c.* 10.50 m. The channels of anathyrosis perhaps indicate the walls had orthostates. Further anathyrosis on the area to the south of the orthostate markings may be for wall blocks. The walls may have had a cut stone socle topped with mud-brick as at the Heraion at Olympia, or it is possible they may have been entirely of worked stone blocks. A rectangular mark protruding from the orthostate channels along the exterior face of the rear wall may have been for vertical pilasters or piers lining the wall. The use of wall piers was also known at the temples at Isthmia and Olympia. Østby proposed that the walls possibly had additional vertical wooden pilasters along the interior of the walls to brace the mud-brick.[182] An adyton appears to have existed at the rear of the cella instead of an opisthodomos. This can be deduced by the facts that the interior parallel colonnades do not extend past the Classical naos-opisthodomos wall, the rear of the cella was enclosed, and the floor level was 0.25 m lower than that in the naos. The adyton was separated from the naos by either a wall, balustrade, or screen. It is unclear if the divider was at the point where the Classical naos-adyton wall now stands or if its position is marked by the transverse foundation of three small conglomerate blocks between the parallel colonnades. This line of foundations was about 0.25 m below the level of the blocks in the stylobate foundations corresponding with the level of the toichobate foundation so that the rear space was a sunken adyton. Access to the adyton must have been by the side aisles as the transverse wall did not extend into the aisles. The transition between the two rooms was also marked by a step descending into the adyton.

The existence of a pronaos on the eastern front is not certain since a cross wall has not been found although it may lie beneath the Classical pronaos-naos wall. The foundations for the interior colonnades continued into the Classical pronaos

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[182]Østby (1986) 90, figs. 23-25, 29.

which would indicate that if an Archaic pronaos existed it had at least one pair of columns in antis. The level of the conglomerate blocks was 0.26 m lower than those in the naos so the pronaos, like the adyton, had a floor set one step lower than that of the naos. The length of the temple can be estimated as *c.* 38.20 m if the front of the cella building corresponded with that of the Classical temple.

Dörpfeld claimed Archaic architectural remains and some Doric capitals in the Tegea Museum were also from the temple although their provenance is unknown.[183] Recent excavations to the north of the temple have unearthed an Archaic raking sima and a piece of an Early Classical Doric capital.[184] Since these two pieces were built into the foundations of a modern house, they cannot be ascribed with any certainty to the Archaic temple.

In the original report, Østby thought the roof was of thatch as no roof tiles had been reported. The recent excavations, however, have discovered considerable amounts of roof tiles. Although their dates and types were not published, some were found in an Archaic layer.[185] Some of these tiles must have belonged to the temple. The lack of tiles at any site does not necessarily mean that none existed. Even at remote sites, tiles are not always in abundance as they are often reused in later times for other structures. It seems extremely unlikely that the temple stood for over two hundred years with a thatched roof since tile technology was available and widely used in Arcadia by then. Terracotta tiles had many advantages over thatch which the Tegeans must surely have known, such as being more permanent, rarely needing to be replaced, and less susceptible to fire. The use of certain architectural features, namely heavy bearing supports, new materials, and advanced construction techniques, would encourage one to expect that current roofing technology would have been used. Furthermore, a primitive roofing material would not be expected on a monumental temple in a wealthy, powerful city within a sanctuary which had an illustrious tradition. Even if the temple roof was originally of thatch it must have been re-roofed in terracotta sometime in the sixth or fifth

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[183]Dörpfeld (1883) 284.
[184]Østby, Luce, Nordquist, Tarditi, and Voyatzis (1994) 117, fig. 42.
[185]Østby, Luce, Nordquist, Tarditi, and Voyatzis (1994) 110, 117, 132-133.

century. Most likely, it had a tiled roof from its inception otherwise there would have been no need for such elaborate load-bearing walls and inner columns.

The cella building can be reconstructed with a naos, an adyton, interior parallel colonnades, and a pronaos (*figure 20a*). Although there is no evidence for a peristyle, Østby proposed that one of 6 x 18 columns stood on a stylobate approximately 18 x 49 m; similarly, he restored a side door and cella walls with interior piers along the flanks and both interior and exterior piers along the rear wall.[186] Østby determined most measurements were modules of a standard Doric foot, 0.326 m.[187]

The construction date of the temple may coincide with several votive deposits whose latest material was from the seventh century. The temple must date after the destruction of its Geometric predecessor in the early seventh century. After comparing the temple with the Heraion at Olympia, Østby concluded that the Tegea temple predates the Heraion thus placing it at the end of the seventh century BC.[188] The recent excavations within the cella confirm his dating. This temple appears to be the earliest known temple on the Mainland to use marble, which was a local stone.

TZEMBEROU

South of Asea in the plain to the east of Megalopolis, remains of a building were found beneath a modern chapel of Ayios Yiannis. Nearby a fragment of a disc acroterion was found on the surface.[189]

EARLY ARCHAIC REMAINS

The disc acroterion had a dentillated edge and was decorated with painted and incised tongues and scales. Its diameter was restored to about 0.95 m, and it dated to the late seventh or first half of the sixth century.

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[186]Østby, Luce, Nordquist, Tarditi, and Voyatzis (1994) 141; Østby (1986) 86, 93-95, fig. 29.
[187]Østby (1986) 95.
[188]Østby (1994) 139; Østby (1986) 97-102 dated it to last quarter of seventh century; Dugas (1921) 340 dated it to *c.* 600 BC.
[189]Pikoulas (1988) 106-107, fig. 7, pl. 58.

ANALYSIS OF THE EARLY ARCHAIC TEMPLES OF ARCADIA

INTRODUCTION

By examining the remains of the earliest of these Archaic buildings, their general character can be determined. The use of similar materials, plans, architectural members, and construction techniques seems to indicate a local style of architecture existed in Arcadia for this early period.

From the late seventh century to the first half of the sixth century BC, temples were erected at Alipheira, Bassae, Boreion, Gortsouli, Lousoi, Orchomenos, Palaeopyrgos, Petrovouni, Tegea, and Tzemberou. The sanctuaries at Kotilon and Pallantion had two and three temples respectively in this period. The preservation and quantity of remains vary considerably between places. In some cases, only roof tiles or a few other architectural remnants have been found. This study will be limited to remains found near later temples since replacement temples are usually built upon one another, for example at Alipheira, Boreion, Lousoi, Orchomenos, and Petrovouni.

There is one temple in Arcadia that is consistently unlike all others, the Athena Alea temple at Tegea (*figure 20a*). The Tegean temple has two traits in common with other Arcadian temples, the use of an adyton and the lack of an opisthodomos. The rest of the features at Tegea are not seen elsewhere in Arcadia, such as the use of marble, worked foundation blocks, ashlar stylobate blocks, orthostates, ashlar wall blocks, a toichobate, anathyrosis, interior colonnades for support, a possible peristyle, and monumental size. Tegea should then be viewed as not being predominantly of Arcadian style. Its construction techniques and plan reflect those of other monumental temples in Eleia and the Argolid (*figures 15 and 35*). The Tegea temple's non-conformity to architectural formulae in Arcadia could be due to the power and wealth of its city which would have had the resources and possibly the desire to emulate the great temples of other prominent cities and sanctuaries.

PLANS

The sanctuaries in western and northern Arcadia (Alipheira, Bassae, Cretea, Kotilon, and Lousoi) were situated in rugged mountains. On the other hand, the eastern temples (Boreion, Gortsouli, Orchomenos, Pallantion, Palaeopyrgos, Petrovouni, Tegea, and Tzemberou) were located in an areas with plains surrounded by mountain ranges. Arcadia's terrain not only created a natural boundary with its neighbours but helped to foster a contained artistic style due to its remoteness. It was difficult to gain access to it from neighbouring areas as well as to travel within it. The terrain then makes the placement of temples on the mountain slopes natural. Likewise, in areas where plains are abundant, structures were still built on slopes or peaks; the only exception was the temple at Tegea. Therefore mountains sites were usually chosen for the location of sanctuaries and their cult buildings.

The majority of the Arcadian temples faced either north or south including those at Bassae, Boreion, Gortsouli, Kotilon A, and possibly Cretea. Despite the widely held belief that an eastern orientation was established as a convention by the turn of the sixth century, it was not incorporated in designs everywhere in Arcadia perhaps because of traditions, the locations of altars, the requirements of cults, or the isolation of the province which may have delayed the exchange of developments occurring elsewhere. The orientation of a building to the north or to the south is also found at other early temples outside Arcadia, for example at Asine, Eretria, Halieis, Mycenae, Thermon, and Tiryns. The fact that north to south orientation was so common for early cult buildings not only in Arcadia but elsewhere in Greece indicates that an eastern orientation was not considered a rule at this time. The use of an orientation other than to the east became a tradition in some parts of Arcadia. The first known temple to be situated towards the north was Bassae. Its orientation was imitated by the succeeding temples at nearby sites of Alipheira, Cretea, Kotilon, and Prasidaki on the border with Messenia. Even in the Late Archaic and Classical periods, the use of a non-eastern orientation persisted in western parts of Arcadia.

A noticeable feature of Arcadian buildings is their lack of monumental size. The widths ranged from around 4.20 to 7.50 m and the lengths from around 9.25 to 24.00 m (*figures 20b-j*). These buildings appear small when compared with the

Tegea temple, but are roughly in line with many of their contemporaries from other regions.

The building plans lacked some elements considered standard for the Archaic period, but instead contained some unusual features. No stylobate blocks or trenches for them have been identified for these Arcadian structures indicating they were not peripteral. The decision to build a cult building without a peristyle presumably was due to economics since a peristyle would require a considerable amount of money for supplies and labour. Instead of a peristyle, the typical plan had only a cella and a pronaos which could have had columns arranged either in-antis or prostyle. An opisthodomos was not a standard part of the design either since the only possible evidence for one was at Bassae. The exterior of the buildings would have resembled the treasuries at Olympia and Delphi.

The cellae comprised either one room or more commonly two. The rear rooms may have been adyta separated from the naos by a wall or by columns. The use of two columns placed across the cella behind the cult statue at Pallantion C was an unusual feature, the prime purpose of which was visually to divide the space into two areas. Internal colonnades were not found as the distance spanned between the walls was not great enough to require them. Other remains include cult statue bases and benches. At Bassae and Tegea, side doors may have existed, an element that reappeared in some Arcadian temples of the Classical period.

CONSTRUCTION TECHNIQUES AND MATERIALS

Unlike the early temples of the Corinthia built with ashlar masonry, the materials used in Arcadian buildings were inexpensive and readily available. Field stones, terracotta, wood, and mud-brick were cheap, local commodities requiring workers with few skills. Crudely worked stone was employed sparingly for parts of walls, column bases, paving slabs, cult statue bases, and possibly columns. Ceilings, roof beams, doors, columns, vertical piers, and entablatures were built of wood.

The preserved foundations are of dry rubble construction. In these temples, foundations served only for cella walls, columns, and possibly benches; they were not built to hold a stylobate. The wall socles were two-skinned; that is, they had

two independent faces, the spaces between which were filled with smaller stones and clay to bond the stones together. In a few structures, the walls had large, crudely worked blocks at key points, namely at corners or adjacent to doors. The socle was surmounted by mud-brick and possibly braced by vertical wooden beams. The floors seem to have been of packed earth. An exception to this may have been the floor at Gortsouli where paving was set in the south-east corner of the building, although it may have belonged to a terrace of the earlier, smaller structure.

THE DORIC ORDER

The only Doric element found in Arcadia from the Early Archaic period was at Mantinea possibly associated with a temple of Poseidon Hippios (*figure 41e*). A later Doric capital was from a marble temple of the second half of the sixth century (*figure 41f*). No other remains from the Doric order have been found from before the middle of the sixth century. This does not necessarily mean temples were not Doric, but it suggests that Doric columns, capitals, and entablature, if they existed, were made of perishable materials like wood.

ARCHITECTURAL DECORATION

It is impossible to conclude if the temples had sculptural or painted decoration, and if they did, the forms they took. The mud-brick walls must have been plastered to protect them from the weather. The absence of architectural sculpture could possibly be due to the use of a perishable type of material, poor preservation of sites, or economics since sculpture was costly.

ROOFS

At several temples, neither roof tiles nor revetments were found; at others, their type, date, or features were not published.[190] Inspection of the sites did reveal a great deal of information. Laconian tiles can still be seen lying around the sites at

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[190]Roof tiles from Boreion, Cretea, Gortsouli, Kotilon, Mavriki, Orchomenos, Pallantion, Petrovouni, and the early temple at Alipheira all exist but information on their dates and styles were not mentioned in reports on their sites.

Alipheira, Gortsouli, Kotilon, Lousoi, Orchomenos, Palaeopyrgos, Pallantion, and Petrovouni, along with those already known at Bassae and Boreion.

ROOF TILES

The Arcadian roof (*figure 26*) was characterised by Laconian-type tiles, that is, concave pans and convex covers. The pans and covers tapered with the wider part of the pans on the upper part of the slope but just the opposite orientation for the covers. The tiles were of terracotta and usually covered with a black or red wash. Ridge tiles from Bassae were convex with semicircles cut out along the sides for slipping over the cover tiles. No hip tiles have been found allowing one to surmise that the buildings did not have hipped ends but instead had pediments.

Dating roof tiles is very difficult. Most Archaic roof tiles were much thicker and larger than later tiles. The Early Archaic temples always had terracotta roof tiles, but in the Late Archaic period marble became a popular material for tiles. Late Archaic temples also usually had Corinthian-type tiles rather than Laconian.[191]

SIMAS

The only known sima is from Boreion, although it is not certain whether it belonged to the Early or Late Archaic temple. Originally reconstructed as a lateral sima by Rhomaios, Winter believed it was instead a raking sima of similar shape to that from the first temple of Artemis Orthia at Sparta dating to the late seventh to first quarter of the sixth century.[192] If these simas were contemporary, then it would have adorned the Early Archaic Boreion temple. Since no other simas, raking or lateral, have been identified, it may be that they were not an important part of the system. The raking sima may have been like that from Laconia.

ANTEFIXES

There were two types of antefixes that have been identified. The first type was identical to the Laconian lunulae antefixes (*figures 23e-g*). Examples of this type have been recovered from Boreion and Palaeopyrgos. The more typical form

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[191]Alipheira, Asea, and Bassae.
[192]Winter (1993) 104 and 140; Rhomaios (1957) fig. 9.

of antefix was bell-shaped, being semicircular with moulded ornament and a palmette finial (*figures 23a-d*).

Of the four sanctuaries where non-lunulae antefixes have been found (Alipheira, Bassae, Kotilon, and Lousoi), all the antefixes had a semicircular shape probably derived from Laconia. But the semicircular shape was the only element that showed Laconian influence because the decoration, the decorative technique, and the additions to the semicircular shape were all different from those employed for true Laconian antefixes. The Arcadian antefix form was created by placing a small moulded and painted palmette on top of the semicircular shape (*plate 18 and figures 23a-d and 24*).[193] These palmettes have been located at four sanctuaries (Bassae, Boreion, Lousoi, and Palaeopyrgos). Originally thought to be complete antefixes in themselves, the palmette finials were small and broken off underneath. The finials were similar to the central peak of the stamped three-peaked variety from the Argolid. At Alipheira and Lousoi, the semicircular portions of the antefixes were not preserved well enough to determine if they were decorated with palmette finials. Although Rhomaios restored the Boreion temple with these palmettes serving as whole antefixes, they should instead be seen as the finials of the antefixes. It may be that not all Arcadian antefixes had the additional palmette, but it was the dominant form in Arcadia and was almost exclusively used there.

The decoration on the semicircular faces also distinguishes the Arcadian type from Laconian. The most common decorative technique was to use moulded and painted figures like the gorgon faces at Alipheira or heraldic sphinxes at Bassae and Kotilon (*figures 23a-c*).[194] The other design noted was a moulded and painted palmette and lotus antefix from Lousoi (*figure 23d*). The Laconians used paint and incision to create the designs, but in Arcadia ornament was in relief. Hence, Laconian examples were flat in contrast to those from Arcadia. The similarities

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[193]N.K. Cooper (1990) 87 claimed the Arcadian perched palmette was borrowed from Corinthian antefixes. Two Corinthian antefixes from Thasos [*Athens National Museum 16004 and Thasos Museum 278π, 283-5π*: N.K. Cooper (1990) 87, fig. 20] have figures decorating the pentagonal face, with a palmette above, but these are from a Corinthian-type roof. Also she cites the less developed small palmettes decorating a series of Corinthian type antefixes found at Corinth, Nemea, Kalapodi, but this series does not have figural decoration.

[194]The sphinx motif is also found on an architectural fragments from *Delphi A185*: LeRoy (1967) 90, pl. 31; *Capua*: Koch (1912) pl. 12; *Corcyra Museum 447 and 44*: Rodenwaldt (1940) 135, figs. 106-109. All of these antefixes have been dated from the late seventh to early sixth century.

between form, decoration, and technique illustrate a specific antefix type can be attributed to Arcadia. All of these antefixes can be dated to the late seventh and early sixth centuries.

The two antefixes at Boreion and Palaeopyrgos do not fit into the Arcadian standard. They are incised and painted semicircular antefixes with lunulae (*figures 23e-g*). These raise questions as to their origin and their sanctuaries' relationship with Sparta. Although these may be extremely accurate copies of Laconian antefixes, they could have been either imported directly from Laconia or produced by Laconian artisans employed in Arcadia. A problem of chronology occurs at both sites because there exist both the lunulae antefixes and the palmette finials which could have replaced or been replaced by the lunulae antefixes. It is possible that both were combined on the roofs or, more likely, there were two separate roofs.

ACROTERIA

A number of acroteria exist from Arcadia, all in the same disc shape as those from Laconia. Since they always topped Laconian-type roofs, they are usually called Laconian disc acroteria. Despite their shapes, these discs are different from those on Laconian buildings. The typical Arcadian acroterion has concentric circles of boldly executed ornament in relief rather than the delicately painted zones of those from Laconia (*figures 25b-e*). One characteristic of the Arcadian type is an outer zone with rounded leaves or gadroons in relief sometimes broken periodically by a pointed leaf. They also have many tori and a dentillated rim with the dentils widely spaced. These discs were really composed of two discs joined at the outer edges; the concave front adorned with mouldings, the convex back bracing the front. Compared to Laconian discs, they are relatively small, generally under half a metre wide. Winter assigned the larger disc to the pediment above the entrance rather than to that over the rear of the temple by analogy with the finding of a larger disc to the east of the temple at Petrovouni and the Heraion at Olympia.[195]

Winter distinguished three types of disc acroteria in Early Archaic Arcadia. Her first type included discs from Bassae (known as 'B'), Halieis, Kynouria, and

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[195]Winter (1993) 140.

the Heraion at Olympia (*figures 25b and 29b and plate 37*). She described them as polychrome and dentillated. Bassae 'A' comprises her second group which is a variation of the first (*figure 23a*). Her third category included acroteria from Boreion, Lousoi, and Petrovouni; all are small, dated to the late seventh century, and have dentils and bands of moulded tongues (*figures 25c-e*). But Bassae 'A' has more similarities with the Heraion and Kynouria discs than has Bassae 'B'. They have almost identical decorative patterns, decorative techniques, and careful workmanship. On the other hand, Bassae 'B' has boldly moulded zones as do the discs from Halieis and the remainder of Arcadia. Therefore, the Bassae discs should switch categories.

The bold and coarse mouldings of the Arcadian type discs oppose the precise and ornate detailing on the Laconian style discs of Bassae 'A', the Heraion at Olympia, and Tzemberou. Also there is a lack of incision and use of colours, for the Arcadian discs are usually just washed black. The Arcadians may have borrowed the shape of the disc and such recognisable features as dentils and zones of mouldings from the Laconians, but the overall handling of the decoration and techniques used on the acroteria is radically different.

Dating disc acroteria is difficult. One school of thought is that the Arcadian-style discs are earlier than the Laconian-style examples from Bassae and Olympia because the Arcadian ones are more crude. There are several problems with this hypothesis. Firstly, refinement does not necessarily mean a later date. Secondly, nearly all scholars hold the belief that the Laconians were responsible for creating the disc-shaped acroterion; the Arcadian discs therefore could not predate them. The Arcadians may not have had the skill, money, or desire to imitate the detailed ornament of the Laconian discs. Generally the Arcadian discs have been dated to the end of the seventh century or very early sixth centuries although there does not seem to be any solid proof for the dating. It is based on the premise that they are an earlier, primitive type eventually developing into the refined Laconian type at Olympia and Bassae which are traditionally dated to the first quarter of the sixth century BC. Instead the Arcadian type acroteria are probably slightly simpler imitations of the ornate discs which the Arcadians may have admired.

CONCLUSION FOR ROOFS

Roofs are particularly important because they are sometimes the best preserved feature from practically every temple as well as revealing an element of architectural style. Roof tiles in the Early Archaic period were usually of Laconian type, made of terracotta, and had a black or red wash, while Late Archaic tiles were generally of the Corinthian type and made from marble. The Early Archaic antefixes were semicircular with added palmette finials creating a "bell-shape"; they were decorated with moulded and painted flora or mythological creatures. There was evidence for Late Archaic antefixes at only one temple. The disc acroteria were all from the Early Archaic period except for the marble ones at the Late Archaic temple at Mavriki. The typical disc was terracotta, dentillated, boldly moulded, and relatively small. Bassae 'A' and the disc from the Olympian Heraion are usually considered to be of Laconian workmanship.

By examining this evidence, it is clear that Early Archaic temples had elaborately decorated roofs while the Late Archaic temples did not use these elements as extensively or at all. In addition, the materials changed from terracotta to marble and the type of tile from Laconian to Corinthian.

In the Early Archaic period, the basic tile and revetment shapes were borrowed from Laconia but then altered by adding structural elements and by using different decorative techniques and motifs. Furthermore, when compared to the other areas of the Peloponnese, the Arcadian roof in the Early Archaic times was quite distinctive (*figure 26*).

CONCLUSION

The fact that so many features of the Tegean temple do not appear elsewhere in Arcadia, coupled with the recognition that the remainder of the Arcadian structures repeatedly have the same characteristics, demonstrates that the area had a local architectural style in the Early Archaic period. These temples show a pattern of similar techniques, materials, and design. Important features which define the Arcadian style were the placement of cult buildings on mountain slopes despite accessibility and proximity to towns, the common use of north or south orientation,

and non-monumental scale. Distribution was concentrated in the south-eastern and far western regions while the northern and central regions had far fewer temples. Materials characteristically used are mud-brick, unworked stones, crudely worked limestone, wood, terracotta for roofs, and earth for floors. As with most temples of this period, no Doric elements were preserved, which is probably due to the use of wood in rendering the columns and entablature. Both foundations and wall socles were of dry rubble masonry; the remainder of the wall was topped with mud-brick and possibly braced by wooden supports. Only occasionally were worked stones incorporated into the building and then primarily for corners of walls, column bases, thresholds, and cult statue bases. The roofs were laid with Laconian type terracotta tiles covered with a black or red wash. Small terracotta disc acroteria with dentillated edges crowned the pediments while moulded and painted bell-shaped antefixes lined the eaves.

The typical plan was of a non-peripteral structure composed of one or two rooms with a pronaos but no opisthodomos. Adyta at the rear of cellae were defined by walls or columns. Owing to their narrow width, the interiors did not have or need internal colonnades. Although the typical plan was without a peristyle, the pronaos, in all likelihood, had wooden columns either in-antis or prostyle.

From examining and comparing all the known Early Archaic temples in Arcadia, there clearly are similarities between them; thus, a regional design system for this early period can be detected. Moreover, this is shown by comparing their common characteristics with those of temples in other regions of the Peloponnese. For instance, in the Corinthia the temples were usually monumental, peripteral, east facing, built with ashlar blocks, and roofed with a completely dissimilar system. Many of the design aspects used in Arcadia varied significantly from those in other areas, and some of the characteristics, such as north-south orientation and use of adyta, were rarely found elsewhere. Thus, the common use of features at most of the temples can be interpreted as a regional style of architecture peculiar to Arcadia. Furthermore, some of these aspects became part of a tradition in Arcadian architecture which was used in later Archaic, Classical, and Hellenistic temples.

CHAPTER FOUR: LACONIA

Remains of Early Archaic temples in Laconia are found at Amyklai, Kynouria, the Artemis Orthia sanctuary of Sparta, the Athena Chalkioikos sanctuary on the acropolis at Sparta, another Athena sanctuary on the Spartan acropolis, Tsakona, and on the Megalopolis road. Most of the sites are grouped around Sparta (*figure 27*). All sites and museums with relevant material were visited; access was given to most of the material, but much of museum material could not be located.

At one of the Archaic sanctuaries, Kokkinia, no buildings have been found but fragments of Doric architecture indicate that an Archaic temple once stood there; the date of the temple is not known but judging from the published Doric capital, the temple or building to which it belonged was built in the second half of the sixth century.[196] At other sites, only architectural terracottas survived from the Early Archaic period as at the Alexandra-Kassandra sanctuary at Amyklai, the Apollo Tyritas sanctuary at Kynouria, and the Apollo Hyperteleatas sanctuary at Phoiniki. Early Archaic buildings must have existed at those sites; in addition, at Phoiniki and possibly Kynouria other later architectural fragments indicate that a successor replaced the earlier temple in the Late Archaic or Early Classical periods.

Two 'non-temple' structures at the Amyklaion and the Menelaion are also included in this study because they played an important role in religious architecture in Laconia and they were of the Doric order. The Amyklaion was the most unusual building both in Laconia and in the Peloponnese as it was a large altar covered with reliefs which combined the Doric and the Ionic orders. The Amyklaion's Doric capitals (*figure 42a*) will be used in the discussion on the Doric order. In addition, the Amyklaion's sculptural programme was representative of the Lacedaemonians desire to decorate richly their cult buildings at least in the Late Archaic period as also attested by the Athena Chalkioikos temple at Sparta. The previous Early

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[196]Twelve km south-east of Skala, J. de la Genière (1993) 153-158; (1991) 257-265; and (1986) 29-46 may have located the temple of the Mother of the Gods at ancient Akraia as described by Pausanias (III.22.4). She believed it was at modern Kokkinia where Wace and Hasluck (1907-8) 162 first found traces. A Doric capital was built into a church which led to investigations on the neighbouring hill of Kastraki where the remains of a sanctuary whose masonry was pillaged for the church were identified [H.W. Catling (1988-9) 31]. Although votive offerings were mostly Late Hellenistic, early remains included a Late Geometric sherd, a small Daedalic head, some seventh and sixth century pottery, and sixth century Doric capitals.

Archaic building programmes may also have stressed architectural ornament but utilising materials of a more perishable nature, in the form of wall-paintings and wooden carvings.

REMAINS AT SITES

AMYKLAI

The double cult of the hero Hyakinthos and Apollo was located six km south of Sparta near the village of Amyklai. The first datable dedications at the Amyklaion were from the Protogeometric to Middle Geometric II period when the cult of Hyakinthos alone was established at the site around 800 BC.[197] In the middle of the eighth century, Amyklai was incorporated into Sparta's realm and the worship of Apollo was added to the Amyklaion. Near the end of the sixth century, Bathykles the Magnesian was employed to build a monument consisting of a tomb for Hyakinthos at the base of a throne of Apollo.[198] The throne was intended as the seat for the colossal standing xoanon statue of Apollo mentioned by Pausanias (III.18.9-19.5). There are no traces of a previous shrine in situ.

A large votive hoard by a church in the modern village of Amyklai contained items ranging from the Geometric to Hellenistic periods, although the majority of the finds were Archaic. A number of clay plaques with Laconian hero-reliefs were recovered. They came from the shrine of Alexandra-Kassandra and Zeus-Agamemnon mentioned by Pausanias (III.19.6). All attempts to locate a temple associated with these votives were unsuccessful.

EARLY ARCHAIC REMAINS[199]

The well-preserved terracotta disc acroterion now in the Sparta Museum (*figure 30b*) may have belonged to the Alexandra-Kassandra structure rather than to the Amyklaion. It measures 0.93 m wide inclunding the dentils and has concentric

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[197]Calligas (1992) 46.
[198]Faustoferri (1993) 159-166; Calligas (1992) 31-48; Pipili (1987) 82; Buschor and von Massow (1927) 1-85.
[199]Mallwitz (1968) 133-140, pl. 48; Orlandos (1960) 170, fig. 184; Chrisanthos (1960) 230, pl. 171a; Buschor and von Massow (1927) 44, figs. 22-23, pl. 10.

mouldings painted with tongue, guilloche, double guilloche, and scale patterns. A fragment of a sima with painted tongues was found in the excavations of the Amyklaion but may not have belonged to the Bathykles monument. Additionally, semicircular antefixes with lunulae, *c.* 0.30 m wide, were discovered in the area; they dated to the late seventh or early sixth century (*figure 29a*). Although it is not known which building they would have adorned, their early date would exclude the Bathykles monument.

KYNOURIA

Along the west coast of the Argolid gulf is the region of Kynouria (*figure 18*). Both the Lacedaemonians and the Argives fought for its control, particularly its northern district of Thyrea, as recorded by ancient writers including Pausanias (III.2.2-3, 7.2) and Herodotus (I.82).[200] Sparta firmly ruled the southern half of the region throughout the Archaic period which, of course, threatened Argos to the north. Hence the control of Thyrea was strategically important for both city-states.

Near the centre of the region along the coast was the settlement of Tyros. Close to the fortified Hellenistic and Roman city was a sanctuary of Apollo Tyritas mentioned by Pausanias (VII.21.6). The cult of Tyritas was connected with the inhabitants of pre-Dorian times and later identified with Apollo.[201] The position of the temple has not yet been determined, but Rhomaios placed it at or near the Prophitis Elias shrine.[202]

EARLY ARCHAIC REMAINS

Excavations at Xerokampi near Tyros uncovered architectural remnants belonging to a temple of the sixth century BC. The remains were fragments of two marble Doric capitals and a poros Doric epistyle.[203] They were all from the late sixth century.

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[200]Tomlinson (1972) 96.
[201]Phaklaris (1990) 237.
[202]Kalloutsi (1930) fig. 1; Rhomaios (1911) 254.
[203]Rhomaios (1953) 251, fig. 1; Kalloutsi, 1930, fig. 2.

Earlier remains from a Laconian roof included fragments of terracotta disc acroteria and antefixes.[204] The two fragments of disc acroteria were moulded, painted, and incised with scales, tongues, and dentils (*figures 30d-e*). The diameters of the discs have been reconstructed as 0.52 and 0.62 m with only one acroterion definitely having dentils. Semicircular antefixes with incised and painted lunulae had a width of 0.30 m (*figure 29b*). The architectural terracottas came from a building constructed in the late seventh or early sixth century. As these terracottas are earlier than the Doric fragments, it seems that there were two successive Archaic temples or two phases of a temple originally built in the Early Archaic period.

The Early Archaic terracottas were Laconian in origin. The existence of these Laconian type terracottas verifies ancient authors who claim Sparta had control over the area. The use of the Lacedaemonian's unique decorative roofs would act as propaganda to show the locals and invaders that the territory belonged to Sparta.

MEGALOPOLIS ROAD

Many miniature vases of the Archaic period have been discovered around a small temple located to the north of Sparta on the banks of the Eurotas river along the road to Megalopolis.[205] Evidence of burnt sacrifice, numerous miniature pots, terracottas, and lead figurines of votive character affirm that this was a shrine. Although the sanctuary lasted into the third or second century BC, the majority of finds were of the mid seventh to mid sixth century. No inscriptions were found, but the position of the sanctuary as it relates to Pausanias' description of the area (III.20.8) signifies that this may have been the Achilleion.[206]

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[204]Phaklaris (1990) fig. 100, pl. 75; Rhomaios (1953) 253-254, figs. 2-6; Kalloutsi (1930) figs. 3-4; Rhomaios (1911) fig. 3.
[205]Stibbe (1989) 96; Dickins (1906-7) 169-173.
[206]Dickins (1906-7) 173.

EARLY ARCHAIC TEMPLE[207]

In a burnt stratum lay two walls of irregular-shaped blocks (*figure 28a*); their widths were approximately 1.00 m. At one end of the longest wall, extending 18.50 m, was the deposit of miniature vases. Close to the wall, tiles with a black or brown glaze on one side were discovered. A section of a small Doric column, originally covered with fine marble stucco, was also found near the wall.[208] Unfortunately the date of the structure is not secure, but the Archaic deposit in which it stands suggests that it was built in the earlier part of the Archaic period.

THE MENELAION

The Menelaion, the shrine consecrating the burial places of Menelaos and Helen, is located east of Sparta. Herodotus (VI.61), Isokrates (X.63), and Pausanias (III.19.9) referred to a shrine of Menelaos and Helen in Therapne where they were buried and worshipped as gods, although some traditions have Helen dying elsewhere.

In addition to the Menelaion, a second shrine was identified on the North Hill that was almost completely destroyed.[209] A deposit revealed miniature vases and a few terracotta horse-and-rider figurines of sixth century type.

The Menelaion stands on a summit only a few metres from a Mycenaean settlement (*plate 25*). The extant monument, which was probably built *c.* 500 BC, consisted of a ramp leading up to a terrace on which stood a roofed structure containing statues of Menelaos and Helen. It was built of ashlar blocks and a stone triglyph frieze ran around the top of the terrace. The monument was destroyed in the Hellenistic period and not rebuilt. Additional architectural remains indicate that an earlier shrine, *c.* 600 BC, stood at the same location. Prior to that, this site probably had only an altar surrounded by a temenos wall. Votives confirm that the cult was established by the Geometric period.

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[207]Dickins (1906-7) 170-171, fig. 1.

[208]Plaster existed in small patches on three of the four surviving flutes. The size of the column can be restored to 0.32 m in diameter having 20 flutes which were 0.05 m in width; the column had a slight entasis of about 0.01 m in its preserved height of 0.47 m.

[209]H.W. Catling (1976-7) 35.

EARLY ARCHAIC SHRINE

Architectural terracottas dating to the late seventh century indicate that a structure existed, perhaps a small simple cella building approximately 6 x 8 m atop the knoll. Tomlinson believed this building was either built in the eighth century and re-roofed in the seventh century or its construction was contemporary with the roof.[210] He claimed the natural rocky outcropping was the original focus of the cult and was thus embellished by a shrine. The ramp and terrace probably did not exist during this period so access to the shrine was by the natural ground.

The earlier shrine, known as the Old Menelaion, was probably smaller than its successor being without the terrace and ramp (*figure 28b*). H.W. Catling restored the building as pedimental, constructed of carefully cut poros blocks, and roofed with terracotta Laconian tiles.[211] He believed that the Old Menelaion originally stood on the foundation at the innermost part of the extant monument and was either demolished or incorporated in the early fifth century building programme which added the ramp and platform surrounding the original temple.[212] The preservation of the Old Menelaion would account for its remains being found in a cistern filling which on secure pottery evidence cannot have been deposited until the second century BC at the earliest.[213]

Catling believed the Old Menelaion was constructed with cut blocks. Two types of blocks, soft white and hard coarse-grained, existed. Building blocks were discovered in cisterns, deposits, dumps, and in the later terrace, but it is not clear to which construction period they belonged.[214] Some of the soft, white blocks were in a deposit with lead figurines and pottery dated to the end of the seventh century which may confirm the presence of a structure earlier than that period. Furthermore, several blocks of hard, coarse-grained poros had U-shaped lifting projections.[215] It is not

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[210]Tomlinson (1992) 249.
[211]H.W. Catling (1977) 413.
[212]H.W. Catling (1977) 413-414, fig. 7; id. (1976-7) 36, fig. 22.
[213]H.W. Catling (1976-7) 37.
[214]H.W. Catling (1975) 266; Wace, Thompson, and Droop (1908-9) 112. On the slope directly below the Menelaion shrine lay some Archaic material including a poros block and a few antefixes, but there is no indication that a building stood on the lower part of the slope; instead the finds may have fallen from the Menelaion. R. Catling (1986) 205-216.
[215]Coulton (1974) 4-5; Wace, Thompson, and Droop (1908-9) 112.

clear if either type of block was cut for the Old Menelaion or for the later construction phase. Not one stone was found in situ.

Laconian roof tiles and revetments were discovered during excavations. Three segments of dentillated disc acroteria had painted scale patterns of two sizes indicating either two separate acroteria or two zones of scales on one acroterion; these fragments dated to the late seventh or early sixth century.[216] A raking sima with a cavetto profile painted with tongues was similar to those from the temples of Artemis Orthia at Sparta.[217] An antefix with lunulae larger than most in Laconia and more elaborate with bands of painted tongue, triangle, and guilloche patterns was dated to the first quarter of the sixth century (*figure 29g*).[218]

The first traces of reoccupation on the hill after the Mycenaean period dated to the Late Geometric period *c.* 700 BC.[219] A deposit which Catling determined was from the late seventh or early sixth century may have been contemporary with the erection of the Old Menelaion, *c.* 600 BC.[220]

PHOINIKI

Near Epidauros Limera at Phoiniki, inscribed stones and bronze tablets relating to a sanctuary of Apollo Hyperteleatas indicate that the temple of Apollo was the central shrine of the Eleuthero-Laconian League.[221] On the other hand, Pausanias (III.22.10) referred to a sanctuary of Asklepios, named Hyperteleatum, about fifty stades from Asopos. The sanctuary was originally dedicated to Apollo, as indicated by the earlier votives, with the worship of Asklepios added later. Like Kynouria, the control of this region was a source of conflict between the Lacedaemonians and Argives. During the Archaic period, Sparta's territory extended southwards to include all the land on either side of the Laconian gulf.

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[216]R. Catling (1986) 207; H.W. Catling (1977) 413; H.W. Catling (1976-7) 36, fig. 23; Dawkins (1929) fig. 89.
[217]Winter (1993) 105; H.W. Catling (1976-7) 36, fig. 24.
[218]Winter (1993) 107 dated it to *c.* 580 BC; Dawkins (1929) fig. 95.
[219]Calligas (1992) 47; Cartledge (1992) 55.
[220]H.W. Catling (1977) 414-415; id. (1976-7) 36.
[221]Delivorrias (1969) 138; Hondius and Hondius-Van Haeften (1919-21) 147; Wace and Hasluck (1907-8) 165.

In 1968, the discovery of an Archaic capital and triglyph led to the excavation of foundations possibly from a temple.[222] The sanctuary was established around the middle of the sixth century and flourished for quite some time judging from the associated pottery and the erection of several buildings including a temple, an altar, and probably a stoa.[223] The preserved foundations of a Late Archaic temple survived to which the capital and triglyph were most likely linked. A previous structure, of which no remains have been recovered, may have preceded the Late Archaic temple because an early antefix was found.

EARLY ARCHAIC REMAINS

Although the majority of finds did not date until the mid sixth century, an earlier antefix *c.* 600 BC was among the remains. It was typically Laconian being semicircular with incised and painted lunulae and measuring 0.28 m wide (*figure 29c*).[224]

SPARTA

There were many Archaic sanctuaries in Sparta, but only a few have been located within the modern town. Three sanctuaries with temples have been identified, two for Athena on the acropolis and one by the Eurotas river for Artemis. A few other sanctuaries have revealed Archaic architectural remnants.

The sanctuary of Eileithyia lay very near the Artemis Orthia sanctuary according to Pausanias (III.17.1). A separate site for the cult has never been revealed, but roof tiles inscribed with the deity's name and figurines associated with the cult were discovered within the Artemis Orthia sanctuary among the debris from the earliest temple belonging to the seventh or possibly eighth century.[225] The cult may have been part of the Orthia sanctuary, but no temple has been identified which can be associated with it. In a trial pit one hundred and twenty metres north of the Artemis Orthia sanctuary, an antefix fragment was discovered with patterns unlike

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[222]Delivorrias (1969) 138-139, figs. 3-5.
[223]H.W. Catling (1981-2) 24; Calligas (1980) 30; H.W. Catling (1970-1) 14; Delivorrias (1969) 139.
[224]This antefix is in Bonn. Wikander (1990) 287; Dawkins (1929) fig. 91; Koch (1915) 95, fig. 46.
[225]Dawkins (1929) 51; id. (1908-9) 21-22.

those used on most other Laconian antefixes (*figure 29h*).[226] Five hundred metres north of the Orthia sanctuary is the site of a Heroon along the bank of the Eurotas river.[227] Many hero reliefs were discovered in the excavations. An architectural terracotta with a red wash from the area was either from an antefix or acroterion. Moreover, Archaic terracotta relief plaques, which may have been metopes, were found, but no temple was located to accompany them.

The sanctuary of Artemis Orthia and two sanctuaries of Athena on the Spartan acropolis had traces of temples.

FIRST ARTEMIS ORTHIA TEMPLE AT SPARTA[228]

The earliest temple of Artemis Orthia (*figure 28d*) was partly underneath the later temple. Only the south-west portion of the temple survives. The foundation course of the west and south walls was of small undressed stones. Mud-brick was used for the walls, as was evident from the massive quantities in which the walls were buried. Surmounted on the foundation at the west end was a row of slabs set on edge. Set into the wall at fairly regular intervals of about 1.25 m, there were small flat stones backed by a vertical flat stone, together forming a socket in the foundation course most likely for timber beams. Parallel to these sockets along the east-west axis was a row of flat stones set on the floor. This central row of stones probably formed the central axis of the building, thereby giving the building's width as *c.* 4.50 m. These slabs also probably supported timber columns or piers so as to divide the cella into two naves. A slab projecting inwards from the south wall *c.* 1.00 m from the rear of the building may have marked the cross wall for a small adyton or support for a dais on which the xoanon of the goddess may have stood. The floor of the building was marked by the flat stones and by the change of pottery from Geometric to Orientalising. The length of the temple could not be established since no trace of a front corner survived. Nevertheless, the length of the temple was at least 9.00 m judging from the extent of the remaining walls.

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[226]Dawkins (1929) 125, fig. 96.
[227]Stibbe (1989) 87-89; Dawkins (1929) 118; id. (1905-6) 288-294.
[228]Dawkins (1929) 5-16, figs. 5-8; id. (1909-10) 25-27, fig. 5; id. (1908-9) 5-22; id. (1907-8), 12-22; id. (1905-6) 321-322.

Architectural terracottas dated to the seventh century were thus assigned to this first temple.[229] Among the finds were curved roof tiles with a black wash and a dentillated raking sima painted with a tongue pattern. Besides the pan, cover, and ridge tiles, black-washed geison tiles were also recovered. Semicircular antefixes with painted and incised lunulae lined the eaves; they measured 0.27 m wide (*figure 29e*). A black-washed disc acroterion crowned the apex of the roof (*figure 30g*). Unlike later acroteria, this disc did not have dentils or polychrome decoration. This early disc may show the original purpose which was to cover the ridge pole end; from this origin, they took on a decorative function. This acroterion was discovered within the first temple below the sand layer. Likewise, other roofing materials were found in contexts with Geometric and Laconian I pottery. Additional remains from this early period point to a replacement roof of antefixes decorated with painted rosettes and a sima painted with tongues, running spirals, and meanders.[230]

The ninth century is given as the date for the temple's construction by the excavator, but this should probably be revised to the late eighth or early seventh century since Geometric pottery was discovered beneath the floor.[231] Its roof, probably originally of thatch, was replaced by terracotta tiles, antefixes, and acroteria sometime during the second half of the seventh century; it too may have been replaced around the turn of the century. The temple was destroyed in the first quarter of the sixth century as attested by the sherds and votives all dating to the seventh and early sixth centuries mixed in the layer of sand laid to bury the temple after a flood destroyed the sanctuary.[232]

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[229]Dawkins (1929) 117-143, figs. 90, 92 and 99, pl. 26.
[230]Winter (1993) 100 and 107; Dawkins (1929) fig. 101, pl. 25 n.28.
[231]Dawkins (1929) 10; id. (1907-8) 18. The date of *c.* 700 BC for the construction of the temple is supported by Calligas (1992) 47 and Cartledge (1992) 54.
[232]Boardman (1963) 1-7; Dawkins (1907-8) 17. The destruction of the temple was probably not by a fire since there were no charred remains and the action of laying the sand suggests it was destroyed by a flood.

SECOND ARTEMIS ORTHIA TEMPLE AT SPARTA[233]

The second Artemis Orthia temple was built on top of the layer of sand laid over the entire sanctuary to prevent damage from another flood. The sand was laid down as the temple walls rose because working chips from the temple blocks were mixed in with the sand.

The temple measured 7.60 x 17.00 m and had two columns either prostyle or in antis (*figure 28c*).[234] It faced east but was oriented several degrees more to the south than the earlier temple. Very little remains in situ except the high foundations which consist of all four exterior walls and a cross wall between the cella and the pronaos (*plate 26*). Their height is 2.75 m; the walls are 1.10 m thick except for the front wall which is 2.00 m thick. The extra thick front wall indicated to Tomlinson that steps were present on the eastern front.[235] The foundations are of two masonry styles (*plate 26*) which Dawkins saw as evidence of different dates, but Tomlinson believed them to be contemporary.[236] The lower roughly shaped blocks were laid in trenches cut into the ground, while the upper levels of slab-shaped blocks lay in more regular courses above ground but were then buried by the sand to form very deep foundations.

Nothing remains in situ above the foundations. Outside the southern, eastern, and possibly northern walls of the temple were ten circular holes each *c.* 0.60-70 m in diameter cut down through the Archaic deposit and filled with sand at a distance from the walls of 1.20-2.50 m. The holes are believed to be for scaffolding poles rather than for a peristyle.[237]

A segment of a Doric capital and part of a Doric column were built into the Roman theatre.[238] The Doric capital which has a sixth century profile was similar to the one from Tiryns (*figures 42b and 40d*). Only a quarter of the capital was preserved showing that it was carefully cut down to serve another purpose before

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[233]Boardman (1963) 1-7; Dawkins (1929) 19-22, figs. 5-6, 8-9; id. (1909-10) 32-36; id. (1908-9) 5-22; id. (1907-8) 6-7; id. (1906-7) 55-62; Bosanquet (1905-6) 310.

[234]Xenokles' stele, set up in the Artemis Orthia sanctuary, with three victor sickels of the second century BC shows the facade of a distyle in antis temple although this may reflect the facade of the temple when it was rebuilt in the Hellenistic period. Dawkins (1929) 34, fig. 19.

[235]Tomlinson (1992) 248.

[236]Tomlinson (1992) 248.

[237]Dawkins (1907-8) 7.

[238]Dawkins (1929) 21, fig. 10; id. (1909-10) 33 and 39; id. (1907-8) 7, fig. 1.

being reused. The column fragment was 0.60 m long and preserved parts of three flutes; the total number of flutes would have been sixteen. A section of a painted stone lion's mane and miniature pedimental reliefs with heraldic lions are thought to reflect the decorative scheme of the temple's pediment.[239] Of the two miniature reliefs, one was recovered in the sand and the other in a deposit to north of the temple dating shortly after its construction. These miniature pediment sculptures may have been used as dedications or as models for the sculptural programme for the temple. There are other architectural models including Doric capitals, friezes, and an apsidal Doric building.[240]

Acroteria, antefixes, and roof tiles lying above the sand layer and in contexts with Laconian III pottery crowned the temple.[241] The Laconian tiles were covered with a black wash; pan, cover, eaves, and ridge tiles were recovered. A raking sima topped by dentils and painted with a tongue and guilloche patterns adorned the top of the pediment. Semicircular antefixes were decorated with torus mouldings and painted tongues; incision was no longer used (*figure 29f*). Also associated with this temple were portions of two disc acroteria, one with a diameter of about 1.50 m (*figures 30a and 30c*). They had painted and incised concentric zones of scale, guilloche, tongue, and triangle patterns. The outer edges had moulded dentils.

The excavators originally dated the temple to *c.* 550 BC, but then revised the laying down of the sand and temple construction to *c.* 600 BC based on pottery and votives.[242] Boardman later analysed the pottery and concluded that the sand was laid down *c.* 570-60 BC,[243]which allowed the temple to be dated to the second quarter of the sixth century.

ATHENA CHALKIOIKOS TEMPLE ON THE SPARTAN ACROPOLIS

The Athena Chalkioikos and Poliouchos temple and sanctuary were discussed by Pausanias (III.17.2-3) who recorded that the sanctuary was founded by Tyndareus and his sons on the acropolis. He further stated that Gitiadas, who is

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[239]Dawkins (1929) 21-22, fig. 11, pls. 5 and 69.
[240]Dawkins (1929) 22, pls. 72-74.
[241]Dawkins (1929) 32, 131-139, figs. 87, 99-100, 104-105, pls. 22-23, 25-26.
[242]*c. 600 BC:* Dawkins (1909-10) 33; id. (1907-8) 26 and 53. *c. 550 BC:* Dawkins (1906-7) 61.
[243]Boardman (1963) 1-4.

believed to have worked at the end of the sixth century BC, later made both the temple and the image of the goddess in bronze.[244] It is believed that the bronze myth scenes took the form of repoussé plaques lining the walls of the temple. Bronze plates and nails from the site were assigned to the wall decoration of the temple.

Of the original building little is left (*plate 27*).[245] Only the south wall and parts of the west and east walls of the temple still exist. The length of the temple was 25.50 m built of roughly worked polygonal masonry. Although Dickins interpreted the foundations as part of the enclosure wall for the sanctuary, they more likely represented the foundations for the Gitiadas temple. The remnants of mud-brick walls preserved within the polygonal foundations may have been either from its cella walls or from an earlier temple. If the mud-brick walls belonged to the same period as the outer foundations, then the Gitiadas temple may have been peripteral (*figure 28e*). The supposition that the temple was a small structure, in effect the οικ≈Οα mentioned by Thucydides (I, 134), is unfounded. The building Thucydides refers to need not necessarily be the temple, but rather a separate structure within the sanctuary.[246]

A terracotta antefix, a sima fragment, and roof tiles stamped with the name of Athena Chalkioikos were found. In addition, Laconian black-glazed tiles can still be seen lying around the sanctuary. Two Doric capitals were also discovered, one in the excavation and one built into a Byzantine wall, but their association with the temple is uncertain.[247]

The temple's date is based on that given for Gitiadas whose artistic endeavours have been dated anywhere from the late seventh to the late sixth century. Most recent scholars date him to the latter half of the sixth century as he worked with Kallon of Aegina at the Amyklaion.[248] The importance of the Athena Chalkioikos cult and Pausanias' testimony that the sanctuary was established before Gitiadas by Tyndareus support the theory that an earlier temple must have existed.

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[244]Palagia (1993) 167 for date of Gitiadas.
[245]Stibbe (1989) 93-96; Woodward (1926-7) 37-45, pl. 5; Dickins (1907-8) 142-146; id. (1906-7) 137-154, figs. 1-2.
[246]Stibbe (1989) 94 n.135.
[247]Tomlinson (1992) 247.
[248]Palagia (1993) 167; Pipili (1987) 80 n. 749-752; Cartledge (1979) 154.

The Gitiadas temple probably was built over the earlier temple or it was renovated in the late sixth century by him. A wall situated within the outer foundations and lying next to a deposit of burnt offerings which Dickins thought was an altar may be from the earlier temple.[249] Another, more likely, possibility is that the earlier temple walls may be preserved in the mud-brick remnants of the inner foundations.

ATHENA ERGANE TEMPLE ON THE SPARTAN ACROPOLIS [250]

Foundations of a building 13.50 m south of the Athena Chalkioikos temple remains appeared to belong to a temple since the finds discovered inside and outside the building were of a votive nature. The finds bore no dedication to any deity but Athena, so this could have been a subsidiary shrine of the goddess less famous than the Brazen House higher up the slope. Pausanias (III.17.4) referred to a temple of Athena Ergane within the same temenos as the Athena Chalkioikos temple, although he could not have seen this building since it was destroyed by the construction of the theatre cavea wall in the late first century BC.

The building, which is no longer visible, was oriented south-east by north-west (*figure 28f*). Only the north, east, and west walls were preserved; the north retained its full length of 9.40 m. There was no trace of the south wall, but the width of the building was estimated at *c.* 4.90 m based on the extension of the votive deposit. The walls measured 0.60 m in thickness and, where best preserved, stood to a height of three courses. They were built of small unworked stones with larger, roughly trimmed blocks at the angles. Mud-brick seems to have been laid on the rubble socle because traces of it remained inside the building and around the walls.

Roof tiles from both sides of the north wall were of Laconian type with black glaze. Fragments of a disc acroterion, dated to the late seventh or early sixth century, were found scattered between this building and the Chalkioikos sanctuary.[251] The disc had dentils, moulded tori, and concentric zones painted with scale, tongue, double guilloche, and step patterns (*figure 30f*).

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[249]Dickins (1906-7)145-146.
[250]Stibbe (1989) 94, fig. 30; Woodward (1926-7) 37-48, fig. 1, pl. 5; Woodward and Hobling (1923-4; 1924-5) 252.
[251]Winter (1993) 102-103; Woodward (1926-7) 40-42, fig. 2.

In addition to the existence of the acroterion, orientalising pottery lying on virgin soil near the east wall helped to date the temple's construction to the late seventh century. Burnt remains indicated that the destruction of the building was due to fire sometime before *c.* 30-20 BC when the theatre was built.

TSAKONA

On a ridge north-east of Sparta lay a sanctuary with two buildings: one thought to be a temple and the other whose function is unknown. The surface remains indicate that the sanctuary was occupied from the late eighth century to the Roman period. The excavator H.W. Catling believed this site was dedicated to Zeus Messapeus as mentioned in Pausanias (III.20.3) since the terracotta figurines of ithyphallic men and pregnant women suggested a cult concerned with human reproduction.[252] On the other hand, a cup with an inscription of Messapeus was recovered lower down the hill and Pausanias' description of the temenos of Zeus Messapeus on the west side of the Spartan plain corresponds with a site at Anthochori from which came a tile stamp inscribed with the words Zeus Messapeus.[253] There is a possibility then that Tsakona may not have been dedicated to Zeus Messapeus or there were two such sanctuaries.

EARLY ARCHAIC TEMPLE[254]

This easterly oriented structure is said to have been *c.* 5 x 22 m, but the middle portions of these walls are missing and the westernmost walls are not actually on the same axis as the eastern walls. This strongly suggests that the building was only about 11 m long (*figure 28g*). This theory is furthered by the finding of a disc acroterion among the collapsed roof debris at that same distance from the entrance. In addition, the cult statue base stands about 9 m from the entrance which would be set near the rear of the wall. So instead of one large building, there were two smaller ones, the eastern one being a temple. The western

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[252]H.W. Catling (1990a) 21.
[253]H.W. Catling (1990a) 21-22; H.W. Catling and D.G.J. Shipley (1989) 187-200.
[254]H.W. Catling (1990a) 23-24, fig. 4, pls. 3c-d, 4c; id. (1990b) 280, figs. 3-4. This is Catling's Building I.

structure may have had an apsidal wall and may have preceded the temple, possibly also as a cult building.

The north and south walls of the temple seem to have extended as antae at the east end, although there was no sign of postholes or column bases for the shafts that probably were needed to support the lintel of the resulting porch. The construction of the walls, being 0.60 m wide, was of naturally fractured slabs of bluish schist. It is unknown whether the walls were built to their full height in schist or whether the upper courses were of mud-brick; the site was so denuded that mud-brick was not easy to recognise.

The building was covered with a roof of Laconian glazed tiles which the excavator believed was gabled. Other roof material recovered included ridge tiles, painted and inscribed antefixes with crescents (*figure 29d*), and disc acroteria of which only black moulded tori are illustrated.[255]

The date for this sanctuary and temple was given by the Laconia survey as *c.* 600 BC based on the architectural terracottas.[256] The excavator believed that the temple underwent several repairs or reconstructions.

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[255]H.W. Catling (1990a) pl. 6a,b; id. (1990b) fig. 5.
[256]Cavanagh and Crouwel (1988) 79.

ANALYSIS OF THE EARLY ARCHAIC TEMPLES OF LACONIA

INTRODUCTION

There were many places in Laconia with Early Archaic temple remains. Unfortunately most of the remains were scanty creating problems of analysis because of an incomplete picture. For some of the issues addressed, conclusions can only be hypothesised. Still, there were trends for Laconian temples in the Early Archaic period that were generally followed. For instance, an easterly orientation was the norm for Laconian temples, as demonstrated at both Artemis Orthia temples, both acropolis temples, the Megalopolis Road temple, and the temple at Tsakona. Another example was the type of site chosen for the temples and sanctuaries; they were usually situated upon a hill which is not surprising since the landscape in Laconia is very hilly and mountainous. A few shrines were built along the flooding Eurotas river (Artemis Orthia, the Eurotas Heroon, and the Megalopolis road shrine).

More importantly, the majority of sites were within eight km of the acropolis of Sparta (*figure 27*). Only the temples at Kynouria, Kokkinia, and Phoiniki were not within easy walking distance from Sparta. The Kynouria and Phoiniki temples were special cases since their regions were a source of constant conflict between Sparta and Argos. The fact that the architectural terracottas of both temples were of Laconian style strongly suggests that when they were built those areas were under Spartan control. It can be considered as propaganda intended to show that an area belonged to Sparta by putting its distinctive architectural stamp on the temples.

Along with the usual Olympian deities, ancestral heroes were worshipped in temples or shrines in Laconia including Menelaos and Helen, Alexandra-Kassandra, and Zeus-Agamemnon. This worship of ancestral heroes in temples was a characteristic of Laconian cult.

In other regions of the Peloponnese, there is a clear difference between architecture of the Early Archaic and the Late Archaic periods with a change occurring about the middle of the sixth century. As with other regions, the Late

Archaic period in Laconia was one of building temples fully of worked stone and in the stone Doric order.

PLANS

One characteristic of the temple plans was their lack of monumentality even in the Late Archaic period when other temples throughout the Peloponnese were built on a much larger scale (*figures 3, 15a, 20a, 28, and 35a*). The Late Archaic temple by Gitiadas may have been peripteral, but the Early Archaic temples were prostyle or distyle in-antis. A few fragments of stone columns and capitals must have been used either within cellae or, more likely, to support the porches. Internal supports were generally not needed as the interior widths were not great for any of the Laconian temples. An odd feature of the sixth century second Artemis Orthia temple was the appearance of the circular holes around the exterior walls probably for scaffolding poles rather than a wooden peristyle. The interiors only had a naos and pronaos; there was no evidence whatsoever for an opisthodomos or an adyton on any plan. Few cult statue bases survived.

CONSTRUCTION TECHNIQUES AND MATERIALS

The lower walls were generally of rubble construction and the upper walls of mud-brick as attested at the late seventh and early sixth century temples at the Megalopolis road shrine, Phoiniki, Sparta, and Tsakona. One major difference between the Early Archaic buildings and those of the Late Archaic period was the change of building materials from rubble to cut stone. Worked blocks were common from the second quarter of the sixth century onwards as demonstrated by the second Artemis Orthia temple foundations, the Athena Chalkioikos temple, the Menelaion, and the Amyklaion. The floors were generally of packed earth.

Other construction materials on the Early Archaic Laconian temples included terracotta, bronze, plaster, and wood. Wood was employed for the ceiling, interior supports, columns, doors, wall bracers, possibly sculpture, and possibly Doric entablatures. Terracotta was used for roof tiles, roof revetment, and plaques which may have been metopes. Bronze reliefs were attached to the walls of the Athena

Chalkioikos temple in the late sixth century. Plaster must have covered the mud-brick walls to protect them from the elements.

THE DORIC ORDER

Doric elements have been recovered from areas surrounding temples in Laconia including a Doric capital and a column section from the Artemis Orthia sanctuary thought to belong to the sixth century temple; a sixth century Doric capital at Kokkinia built into a nearly church; Doric capitals from the Amyklaion; and an Archaic capital from Phoiniki (*figures 42a-b*). Other Doric elements of uncertain date were from the Megalopolis Road shrine (a column), the Spartan Acropolis (two Doric capitals), and the Kynouria temple (two marble capitals and a poros Doric epistyle).

ARCHITECTURAL DECORATION

The exteriors of some of these temples were elaborately decorated, but little remains for most structures. The most common form of exterior ornament was roof revetment of polychrome antefixes and acroteria. The Heroon on the Eurotas river had painted terracotta plaques which could have been metopes. Presumably, the walls were covered with plaster which could have been painted with designs. The second Artemis Orthia temple may have had a pediment sculpted with heraldic lions judging from the poros lion's mane and the pedimental models with heraldic lions. The Late Archaic Amyklaion was very ornate as shown by the extant sculpted floral friezes and the reference by Pausanias to many relief panels of mythological scenes. However, this was not typical and presumably reflects Ionian imported style within Laconia. Literary sources also mention that the Brazen House, i.e. the temple of Athena Chalkioikos, was decorated with bronze plaques. The last two Late Archaic buildings, in particular, had lavish facades which may indicate that some of the earlier Laconian temples were as richly decorated. Where no ornamentation exists at sites, it is not clear whether the buildings never were decorated or if the decoration simply did not survive.

ROOFS

There was a very specific type of roof tile found on Laconian temples consisting of curved pan and cover tiles. This type of roof is called Laconian because it is believed to have been invented in this region and all the roofs in Laconia were of that type. To this day, roof tiles can still be seen lying around the temples of Artemis Orthia, the Spartan acropolis, and Tsakona.

Throughout the Archaic period, all the temples in Laconia had basically the same roofing system and style of decoration (*figure 31*). Pan tiles were concave, shallow, and tapered at the bottom in order to rest within the lower tiles; cover tiles were convex and tapered slightly towards the top to be covered by the tile above. The tiles were covered with a black or occasionally a red wash. Pans and covers were the most common tiles; some ridge tiles have also been retrieved at Kynouria, the Artemis Orthia sanctuary, and Tsakona. The Artemis Orthia ridge tile had ornate mouldings around the lip at one end to interlock over the adjacent tile and holes along its sides for inserting the back ends of cover tiles. Nail holes for securing tiles to the wooden roof beams have been observed on some pan and ridge tiles. Only one geison tile has been identified, coming from the first temple of Artemis Orthia, so Winter believed that they were never an essential part of the canonical Laconian roof.[257]

SIMAS

Despite N.K. Cooper's claims that in the early phases of the Laconian system there was no indication of the use of raking simas, there is evidence for them at the Artemis Orthia sanctuary.[258] Both the first and second temples were decorated with colourful raking simas, decorated with painted and incised tongues topped by moulded dentils (*figure 31*). The second temple's sima was more elaborate with the addition of a painted guilloche. The raking simas created a silhouette of teeth-like projections along the edge of the entire pediment mirrored by the dentillated acroteria crowning the apex on the second Artemis Orthia temple. The use of a dentillated border is not known anywhere else on the Mainland, and

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[257]Winter (1993) 96 and 108; Winter (1990) 18.
[258]N.K. Cooper (1989) 9.

the nearest parallels are mid sixth century simas from Neandria and Larisa in Asia Minor and the island of Thasos.

A few other fragments of a sima may have been from the lateral sima of the first Artemis Orthia temple or a replacement roof, since they were discovered under the sand with seventh century pottery. The sima had tongue, scroll, and meander patterns; it was slightly later in date than the roof revetment assigned to the first terracotta roof of the first Artemis Orthia temple. Several other raking sima pieces at the sanctuary cannot be assigned to either temple with any certainty. Other simas from Laconia were discovered at the Menelaion and Amyklai; both were decorated with a painted tongue pattern.[259]

Lateral simas and eaves tiles are even rarer in Laconia with only two fragments having been identified from the Artemis Orthia sanctuary dated by context to *c.* 570-550 BC.[260] Only their backs were preserved showing the openings for the cover tiles over which they would sit and traces of moulded dentils.

Since only a few simas have been identified in Laconia, it is difficult to determine if simas were a part of Laconian roofs in the Early Archaic period. The simas that have been preserved have one element in common - painted tongues.

ANTEFIXES

There was only one shape of antefix used on Laconian temples, that of a semicircular form. Three sub-types can be distinguished during the Early Archaic period but they are based solely on a little difference of surface decoration. The antefixes were attached to their cover tiles. They were usually the same size as the cover tiles to which they were attached except that they usually hung down past the edge of the tile rather than being flush with it so as to rest upon the eaves tiles.

The earliest phases were plain or with incised and painted lunulae. The last phase had concentric zones of moulded tori and painted patterns. At Artemis Orthia, the lunulae type adorned the first temple (*figure 29e*), and the painted and moulded antefixes decorated the second temple (*figure 29f*).

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[259]H.W. Catling (1976-7) 36, fig. 24; Buschor and von Massow (1927) 44, fig. 23.
[260]Winter (1993) 106; Dawkins (1929) 140, fig. 98, pl. 33a-b.

PLAIN ANTEFIXES

The first type of antefixes was undecorated except for a plain black or red glaze. Six antefixes from the Artemis Orthia sanctuary had a black glaze and one had a red glaze. Of these, three had a nail hole 0.02 m above the base and three showed traces of the connecting cover tile at the back. Either the red or one of the black-glazed pieces came from a deposit with Geometric and Protocorinthian pottery while the other was found above the sand in a deposit belonging to the first half of the sixth century.[261] The pottery contexts of the remaining antefixes date this first type to the seventh century. They seem to have decorated one of the roofs of the first Artemis Orthia temple. A red-glazed architectural terracotta from the Heroon area north of the Artemis Orthia sanctuary also may have been an antefix of this type or part of an acroterion.

LUNULAE ANTEFIXES

Antefixes with painted and incised radial crescents or lunulae enclosed in incised semicircles on a flat glazed surface were the most typical antefix throughout Laconia *(figures 29a-e)*. The lunulae were incised and painted alternately black, purple, and red. They sprang from half or complete circles, while the band around the antefix edge sometimes had painted triangles. A compass made the circles and lunulae. The outer edges of the antefixes were smooth. The antefixes were usually no larger than the end of the cover tile which they masked except for the lower projecting lip. This type was only known in Laconia, Kynouria, and at a few places in Arcadia. Examples include those at Amyklai, Kynouria, the Menelaion, Phoiniki, the first temple of Artemis Orthia, the Spartan acropolis, and Tsakona. The type is not seen at Aegina, Bassae, Olympia, or other non-Laconian sites where Laconian-type disc acroteria have come to light.

The dating of these antefixes is based on both archaeological context and style. The crescent pattern has been compared to Laconian pottery to try to determine if there was a correlation. The crescent pattern was known at Sparta before the end of the seventh century as shown by its frequent use on the shields of

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[261]It is not clear which piece was found where as Dawkins accidently transposes the findspots just nine pages later. Dawkins (1929) 130 and 139.

lead warrior figurines in the Laconian II period. The motif was occasionally observed on Laconian III pottery, *c.* 590/580-550 BC, as an ornament in place of the more usual rosette on the base of a skyphos or lakaina. A more secure dating can be given when based on the context in which antefixes were excavated. For instance, three antefixes were discovered to the south of the first Artemis Orthia temple in a seventh century context. Winter dated this type of antefix to the period *c.* 650/620-580 BC.[262]

MOULDED ANTEFIXES

The third type of antefix (*figures 29f-h*) had mouldings and painted patterns in concentric zones, but incision was not generally used. These antefixes were noticeably larger in diameter than the tiles to which they were connected. This third group had more variety, using moulded surfaces and polychrome decoration; they sometimes had a zone with a light toned slip to vary the monotony of the dark glaze. This type mirrored the decorative scheme of most disc acroteria as mouldings divided the fragments into concentric rings of painted patterns. Winter believed that the third style was later than the second, *c.* 600-530 BC, claiming that moulded tori were added to an otherwise flat painted face.[263] As for the date of these pieces, two of the painted and moulded fragments from the Artemis Orthia sanctuary came from above the sand whereas others were found with Laconian III pottery.

Antefixes from the second Artemis Orthia temple were representative of this type having tori separating zones of painted tongues (*figure 29f*). The fragment from the Menelaion had features common to both the second and third groups; it had crescents, triangles, and moulded tori (*figure 29g*). This antefix was larger than any antefix from the Artemis Orthia sanctuary, its diameter being about one and a half times that of the cover tile. Additionally, an antefix from a trial trench 120 m north of the Artemis Orthia site had moulded features and painted patterns, such as meanders, tongues, and zigzags on a light background (*figure 29h*).

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[262]Winter (1993) 106-107.
[263]Winter (1993) 107.

ACROTERIA

Laconian acroteria were generally of one type with little variation making it difficult to date them. All were disc-shaped with flat or wedge-shaped undersides which either rested on the ridge of the roof, stood on a base, or hung down over the pediment. The centre opening in the disc interlocked with the ridge pole. The discs were generally large, about 1.00 m in width, with a few even larger. The outer edge usually had moulded dentils except for the earliest, such as that from the first Artemis Orthia temple at Sparta which has a smooth outer surface. There were two variations of these discs dependent solely on their decoration and utilisation of dentils.

The first variety was a monochrome disc without dentils (*figure 30g*). One such acroterion crowned the apex of the first Artemis Orthia temple. The black-glazed disc appears to have been void of all other decoration. A few other monochrome fragments from this sanctuary may have belonged to this variety since they were fairly small and tori were usually painted black. Winter dated this type of acroterion to 650-620 BC.[264]

All the remaining disc acroteria in Laconia (*figures 30 a-f*) were polychrome and were dated by Winter to 625/20-580 BC.[265] Almost all had a dentillated border. The discs were decorated with concentric zones of mouldings and painted patterns including chequer-boards, tongues, scales, hooked triangles, chevrons, steps, single guilloche, double guilloche, and triangles. They showed a high quality of workmanship and careful attention to details. Examples came from the sanctuaries of Artemis Orthia, Athena Ergane, Alexandra-Kassandra, Menelaos and Helen, Zeus Messapeus, and Apollo Tyritas. Similar acroteria were identified outside Laconia at Aegina, Bassae, and Olympia (*figure 25a and plate 37*). They were about 1.00 m at their widest and some were much larger, as for example was one of the Artemis Orthia discs.

An attempt at dating these pieces has been done by comparing them to Laconian pottery techniques and patterns. On the whole, the designs of Laconian II pottery *c.* 630-590 BC bear the closest resemblance to the acroteria; the tongue,

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[264]Winter (1993) 101.
[265]Winter (1993) 102.

scale, triangle, chevron, guilloche, and hooked triangle patterns were all utilised on Laconian II pottery.[266] However, this does not mean that patterns which adapted so well to acroteria would not have continued to be applied in subsequent periods when pottery styles had changed.

Disc acroteria must have been created in Laconia as the earliest examples were all from Sparta and all acroteria in Laconia were disc-shaped. Of the fifty-four Archaic disc acroteria from the Greek world which Goldberg has identified, the majority were from Laconia and Arcadia. Only nine were from the mainland outside the Peloponnese, seven from Asia Minor, and none from Magna Graecia.[267] The most significant collection of discs outside Laconia was that from Arcadia, as discussed in chapter three, where only the shape was influenced by the Laconian discs. Its use in Asia Minor from the mid sixth century onwards may be explained by the fact that the second quarter of the sixth century was a period of contact between it and Sparta. The earliest Laconian discs dated to around the mid seventh century. It may even have been the case that the earliest terracotta acroteria in Greece were Laconian discs, since other types of acroteria did not appear until the end of the seventh or the early part of the sixth century.

CONCLUSION

The Early Archaic Laconian temples were small, simple structures that were not peripteral (*figure 28*). There was some evidence for a pronaos but none for an opisthodomos, an adyton, nor internal columns. Walls were made of a rubble socle topped with mud-bricks. Wood was employed for ceilings, doors, and possibly for Doric features. Terracotta was used for roof tiles, revetments, and decoration. Some temples may have been elaborately decorated with stone sculptural reliefs and bronze relief plaques. All the roofs had Laconian-type roof tiles covered with a black or red wash. The antefixes of the earlier period were semicircular with painted and incised lunulae; the later ones had mouldings and painted zones of patterns. The acroteria for the apex of the roofs were disc-shaped with concentric mouldings and decoration similar to those on pottery of the period.

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[266]Lane (1933-4) 122.
[267]Goldberg (1982) 202-203.

CHAPTER FIVE: MESSENIA

Messenia in the Archaic period was ruled by Sparta which had a great effect on the building activity in this region of the Peloponnese. There are only three sites where ruins of Early Archaic date can be identified (*figure 32*).

REMAINS AT SITES

AKOVITIKA

A sanctuary of Poseidon was uncovered four km to the west of the modern city of Kalamata and 500 m south of the village of Akovitika near the intersection of the coast and the Pamisos river on a marshy flat delta.[268] According to the pottery found, the site was occupied from the Protogeometric to the Classical periods. Votive offerings, such as bronze and iron miniature oars and rudders, a pithos rim inscribed "[an]etheke", and an inscribed cup of the fifth century BC for Poseidon assures the identification of Poseidon as the deity. This may have been the site where the games "Pohoidaia" or "Poseidaia" of Thouria took place.[269]

EARLY ARCHAIC BUILDING

The north side of the sanctuary revealed a rectangular building, about 33 m long, with a Doric inner peristyle. A number of rectangular poros bases placed in a regular row close to the external north wall probably would have supported a wooden colonnade; there were no remains for a peristyle on the remaining three sides, although this does not exclude their existence. The total span of the building from the north colonnade to the south wall was about 8 m. This building may have been a temple, stoa, or another civic monument. Several features, namely its possible surrounding colonnade, vast size, interior colonnade, and placement in the sanctuary, suggest it was a temple. A group of bronze statuettes was discovered

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[268]McDonald and Rapp (1972) 290 n.151; Michaud (1970) 995; Themelis (1969) 352-357, figs. 1-6, plan 1.
[269]Themelis (1969) 356-357. Pausanias (IV.31.1-2) for Thouria.

only a few metres east of the front of the building. However, some of the Laconian-type roof tiles scattered around the building bore the letters "Δ" and "ΔA" which Themelis interpreted as "Damosios", i.e. "civic".[270]

The first architectural phase of the building with the wooden interior colonnade seems to have been destroyed at the end of the seventh century by a fire. The peristyle may have been part of its replacement by a temple in the sixth century.

AYION PANDON - KALAMATA

At a site located near the modern city of Kalamata, one km east of the village of Ayion Pandon, a piece of a roof revetment that was disc-shaped and of Laconian type was unearthed. It was from an Archaic building, perhaps a temple, although no traces of one have been found yet. The excavator believed this site was the Apollo Karneios sanctuary mentioned by Pausanias (IV.31.1). All finds from the site were from the Geometric and Archaic periods.

EARLY ARCHAIC REMAINS

The fragment from a roof had moulded black tori framing a zone of painted tongues with white outlines; a further inner zone had the saw-tooth pattern.[271] Although the Minnesota Messenia Survey labeled it as a cover tile,[272] i.e. antefix, its decoration was similar to that used on acroteria in Laconia and the few examples elsewhere in the Peloponnese at Bassae and Olympia.

LONGA

The site of Ayios Andhreas, one km from the sea, is that of Apollo Korythos as testified by two inscriptions found at the site. Pausanias (IV.34.7) passed this sanctuary on his travels along the eastern coast of Messenia. The excavator dug the foundations of five buildings, four of which were from the Geometric or Archaic

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[270]Themelis (1969) 353 and 356.
[271]*Kalamata Museum*. Themelis (1965) 207, pl. 213a.
[272]Winter (1993) 141 also listed it as an antefix from the sixth century; McDonald and Rapp (1972) 316 n.540.

periods.[273] Two buildings were situated to the north (A and B) and three to the south (C, D, and E). Longa A was a fourth century BC Ionic temple. Longa C was a Late Archaic peripteral temple. Longa E was an Early Archaic square building with columns along one side and interior and exterior piers; this building was probably not a temple but served the Apollo cult or another civic role.

Quantities of roof tiles were scattered all over the site; they were of different types and some must have covered the fourth century temple.

LONGA B[274]

Partly beneath Longa A, a long, narrow building ran northwest to southeast. It had two or three rooms with a width of 4.14 m (*figure 33a*). The extending back wall could have been for a rear room or an opisthodomos. Two columns in antis stood in the pronaos, and a further series of columns may have stood in the cella. The walls were of rubble covered by a coating of clay mortar, which may have been remnants of mud-brick. It was originally dated by the excavator to the eighth century, but the finds of Laconian aryballoi in one of the rooms permit a more accurate date to the second half of the seventh century. The structure was obviously in ruins in the fourth century when the Ionic temple was erected over a corner.

LONGA D[275]

Directly below the cella of Longa C, Longa D is believed to be the oldest temple in this sanctuary (*figure 33b*). It had the same eastern orientation as the later temple. Foundations were preserved of three walls; they were of crudely dressed fieldstones covered by an abundance of clay described as mortar. The width of the temple was 5.05 m, and its length was about double that since part of the wall was found farther to the east under buildings C and E. The temple had a cella, but since the east end of the temple was virtually destroyed it was nearly impossible to tell if it originally had a pronaos. A row of wooden columns stood on stone column bases

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[273]McDonald and Rapp (1972) 312 n.504; Valmin (1930) 174-177; Bates (1920) 293; Versakis (1916) 65-118, figs. 2-19.
[274]Versakis (1916) 71-74, figs. 2-4 and 7.
[275]Versakis (1916) 81-83, figs. 5-7.

along the central axis of the cella as at the first temple of Artemis Orthia at Sparta. Two of the stone column bases were preserved at the rear of the cella; between these bases stood the cult statue. Originally this temple was said to date from the eighth century, instead it should be seen as dating to the early or mid seventh century.

ANALYSIS OF THE EARLY ARCHAIC TEMPLES OF MESSENIA

INTRODUCTION

Although Messenia is rich in Late Helladic, Hellenistic, and Roman material, it is poor in Archaic and Classical remains. The relative sparseness of temples in Messenia during the Archaic period may be because many sites are still buried. However, the most likely reason for the paucity of remains must be the fact that Messenia was controlled by the Lacedaemonians. Economic and political control by Sparta must certainly have affected temple building schemes since they were normally commissioned and financed by the state. From our knowledge of Lacedaemonian building activity, very little took place outside of the area immediately around Sparta. Therefore it is not surprising that a conquered area may not have had the money, resources, or freedom to build temples. Instead they may have been dependent on their conquerors for civic projects like temples.

PLANS

There is little known of the Early Archaic temples at Akovitika and Longa. All were long, narrow buildings of the seventh and early sixth centuries BC. Whereas Longa B's plan was a series of rooms, Longa D and Akovitika had one long cella with a central wooden colonnade. These two temples resembled the first Artemis Orthia temple in Sparta with its central wooden colonnade set on stone bases. Neither cult statues nor their bases have survived at Longa B or Akovitika, but one was preserved between the two remaining interior column bases at Longa D. Poor preservation is responsible for the lack of knowledge as to the existence of a pronaos at Akovitika and Longa D. On the other hand, Longa B not only had a

pronaos but there are indications that it had two columns in antis. Along with a pronaos, Longa B had a cella and either an adyton or an opisthodomos.

CONSTRUCTION TECHNIQUES AND MATERIALS

The walls of all four temples were constructed in the same way and of the same materials. The temples had unworked or crudely worked fieldstones as wall socles most likely topped by mud-brick. The walls had each of their faces lined by these stones with the area between filled with smaller rubble. All the temples at Longa were said to have walls built with abundant clay mortar to bind the stones.

THE DORIC ORDER

No stone Doric columns or entablature have been found, but they may have been of wood. The column bases at Akovitika, Longa B, and Longa D must have carried wooden columns, perhaps topped with Doric capitals and entablatures.

ARCHITECTURAL DECORATION

No architectural sculpture or paintings have been found, but again it is possible they may have been made of perishable materials or just have not survived. The mud-brick walls must have been covered with plaster which could have had wall-paintings.

ROOFS

Of the roof tiles and revetment recovered or recorded at these sanctuaries in Messenia, there were fragments of a disc acroterion of Laconian-type from Ayion Pandon and Laconian-type tiles from Akovitika and Longa. The oldest architectural terracottas from Longa, according to Van Buren, resembled those from the Heraion at Olympia. The recovery of only Laconian-type roof tiles and revetment in Messenia makes it likely that they were the standard and the only system used for Archaic buildings. This is not surprising given that Messenia was controlled by Sparta.

CONCLUSION

Archaic temples in Messenia must have been influenced, built, and/or designed by Lacedaemonians since Messenia was ruled by Sparta at this time. The lack of building activity in Messenia during this period must be due to the political and military situation in that region. It was not until the fourth century when Messenia had gained its independence that building activity in the area resumed to a volume nearly equal to that of the Late Helladic period.

Therefore we must accept the paucity of the remains in Messenia and deduce that there was no separate Messenian religious architectural style in the Archaic period. Laconian influence or even Laconian artisans were responsible for such features as the use of Laconian-type roofs, use of interior wooden colonnades set on stone bases, and plans similar to those used throughout Laconia. The Early Archaic temples in Messenia should be seen as following the Laconian style.

CHAPTER SIX: ELEIA

In the eleventh and tenth centuries the city-state of Elis annexed the plains of Peneios to the north, Akroreia to the east, and Pisatis including Olympia to the south (*figure 34*). From the 26th Olympiad (676 BC) and throughout the seventh century, the city of Pisa with the help of its ally, King Pheidon of Argos, recovered their independence and with it the management of the Olympic games. After the second Messenian war, *c.* 580 BC, Elis with Sparta and Dyme of Achaia as its allies recovered Pisa and the Olympia sanctuary. Elis then annexed part of Triphylia to the south of Pisatis according to Pausanias (V.6.4 and VI.22.4). From then on, the boundaries of Eleia were formed by the Neda river (the border with Messenia), the Erymanthos river and hills (the border with Arcadia) and the Larisos river (the border with Achaia).

Remains of Early Archaic temples have been found at Olympia, Kombothekra, Prasidaki, and possibly Elis. Access to material from all three sites was granted and generously provided by the Germans at the museum and site of Olympia.

REMAINS AT SITES

ELIS

Elis, the principal city in this region, may have had a temple in this early period for Athena on the acropolis as mentioned by Pausanias (VI.26.2). Excavations in the early part of this century uncovered a fifth century temple of unusual plan with two small rooms of similar size. This temple had a stone frieze, but earlier terracotta frieze elements and revetment were found in the vicinity. These suggest that the extant temple had a predecessor.

EARLY ARCHAIC REMAINS[276]

A terracotta triglyph said to be from the seventh or sixth century may have belonged to an early temple at the sanctuary of Athena. A fragment of a Late

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[276]Van Buren (1926) 35; Walter (1915) 60-61; Walter (1913) 145-150, figs. 38, 41-42.

Archaic terracotta sima may have been a renovation of the earlier structure or, more likely, adorned the fifth century temple.

KOMBOTHEKRA

An Archaic temple stands on the summit of a mountain in the Lapithos range near Kombothekra and Smerna. This site borders on Arcadia and is very near Alipheira. The sanctuary was dedicated to Artemis Limnatis.

EARLY ARCHAIC TEMPLE[277]

The temple faced south and measured 5.80 x 12.40 m (*figure 35c*). The plan was of a pronaos, a cella, and an adyton, as is clearly shown by the cross wall foundations. There was no stylobate, peristyle, nor opisthodomos. It had well-preserved rubble foundations. Masonry formed the socle of the wall supporting mud-brick, remains of which covered the socle and interior of the cella. The exterior walls were double the thickness of the interior cross walls separating the cella from the pronaos and the adyton. A system of modules of 0.45 m (equal to a cubit), approximately one and a half Greek feet, was applied throughout the temple for the walls and for the dimensions of spaces.[278] Two wooden columns probably stood in the pronaos which were later replaced by stone. Of the superstructure only terracotta Corinthian pan and cover tiles, peaked antefixes (*plate 28*), a sima, and a lion's head spout have survived.[279] There was an extensive collection of roof tiles and revetments that are now lost. The first excavator, Kurt Müller, noted there were several tile systems one of which was a hipped roof as illustrated in the drawings from the original excavations.[280] A hipped roof may have covered the temple in the earliest phase of construction.

The temple appears to have had two phases, the first of which could be dated anywhere from the mid seventh to the early sixth century judging from the

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[277]Sinn (1981) 25-71, fig. 4, pls. 12-13; Sinn (1978) pls. 22-23; Müller (1908) 323-326.
[278]Sinn (1981) 48-49. The exterior walls were two modules wide, and the interior walls were one unit wide. The width of all three rooms excluding walls was nine modules; the total width of the temple was thirteen modules. The length of the temple was twenty seven modules with the lengths of the pronaos being six units long, the naos thirteen units long, and the adyton four units. According to Sinn, the purpose of using units was so that mud-bricks could be standardised to one unit by one unit. Vitruvius (II.8) lists sizes of mud-bricks including one that is one and a half Greek feet square corresponding with the module here.
[279]*Olympia* Museum. Sinn (1981) pls. 14-16. The antefix was *c.* 0.30 m wide by *c.* 0.15 m high.
[280]Sinn (1981) pl. 15.7 from the original drawings by P. Sursos in 1908; Müller (1908) 324.

style of an antefix. This first phase constituted the basic form of the temple. The second phase, dated to around 500 BC based on the profile of a stone capital, involved the addition of stone columns, a stone Doric entablature, a stone threshold for the door, and a terrace around the temple measuring 10.30 x 16.80 m.

The Argive type antefixes at Kombothekra (*figure 16a*) may be explained by the role played by the Argive King Pheidon who could have exported the Argive architectural style to the area in his bid to assert influence in Olympia in the 660's BC. The Argive influence at Kombothekra is further illustrated by its orientation to the south and its simple cella plan. His control over the region in the mid seventh century coincides with the probable construction of the Kombothekra temple and the Old Heraion. The Kombothekra temple is situated in the district of Triphylia in the south of the modern region of Eleia. This area for the most part was controlled by or allied with the city of Pisa and hence the building of an Argive styled temple may have been propaganda to stake claim over the territory by the Pisans and their Argive allies. The utilisation of Argive type roofs in Eleia during the period of Argive control implies that roofing styles were identifiable in the Archaic period and could thus have been used for propaganda purposes.

OLYMPIA

The pan-Hellenic sanctuary of Olympia was situated on the border of the districts of Pisatis and Triphylia where the Kladeos and Alpheios rivers meet. It originally belonged to the nearby city of Pisa until the Dorian invasion when the city of Elis became its supervisor. A series of Eleian kings have been associated with the sanctuary's organisation and management of the games. After a period when the games did not take place, another Eleian king, Iphitos, revived the games in 776 BC. Around the same time, the kings of Elis (Iphitos), Pisa (Kleosthenes), and Sparta (Lykurgos) made a truce treaty immortalised by the Eleians on a bronze disc kept in the temple of Hera which Pausanias saw (V.20.1).

The struggle for control of Olympia endured between Elis and Pisa. The Pisans only supervised three Olympiads (c.748 BC, 644 BC, and 364 BC), none of which were recognised by the Eleians. Pheidon, king of Argos, reorganized the Olympic games in the twenty-eighth Olympiad (668 BC) and then handed over its

control from Elis to Pisa around 660 BC.[281] Strabo (VIII.358) says Pheidon invaded Eleia, but the Eleians teamed up with the Lacedaemonians to get rid of Pheidon and bring Pisatis and Triphylia under their sway.

The site at Olympia was continuously inhabited from the Early Helladic period onwards. A temple need not necessarily have been built by the traditional date of 776 BC for the reorganisation of the games as the Zeus altar had been in use since the tenth century. According to Eleian tradition, a temple was built by the people of Skillous eight years after Oxylos became king *c.* 1096 BC. Archaeological evidence, however, shows that the earliest traces of a temple date to the late eighth century.

Dörpfeld postulated that there were three successive temples. The first, the Old Heraion (Dörpfeld's Heraion I), dated to the end of the eighth century, occupied the area of the existing temple's cella.[282] It was a temple with columns in antis built of mud-brick walls on a roughly worked stone foundation. When this temple was burnt down, he maintained it was succeeded by a larger temple (Heraion II) built on a higher level with a wooden colonnade.[283] The wooden peristyle was continued in the existing Heraion temple (Dörpfeld's Heraion III), built at a still higher level, which Dörpfeld dated to the seventh century BC.[284]

According to Mallwitz, however, there was actually no evidence for the intervening temple (Dörpfeld's Heraion II).[285] The plan which Dörpfeld gave for Heraion II was identical with that of the present temple, and there was no appreciable difference or line of demarcation in the foundation courses and its filling strata below the present floor which would indicate a previous building or even the beginnings of one. There was also no evidence for the destruction of an intervening temple between Heraions I and III. A Corinthian vase, found under the supposed peristyle foundations of Heraion II, was nearly as late as 600 BC. It leaves practically no time interval between the laying of the supposed peristyle foundations of Heraion II and the erection of the present temple (Heraion III) beginning around

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[281]Pausanias (VI.22.2) and Herodotus (VI.127).
[282]Dörpfeld (1935) 137-151, figs. 27-36, pls. 5, 17.
[283]Dörpfeld (1935) 151-161, figs. 37-8.
[284]Dörpfeld (1935) 161-185, figs. 39-48, pls. 5, 9-16.
[285]Mallwitz (1966), 310-376.

600 BC. Nevertheless, the Old Heraion (I) seems to have existed as remains of walls attest; even Mallwitz does not exclude the possibility of a predecessor.

It may be concluded, therefore, that there is only evidence for two temples, the non-peripteral structure from the end of the eighth century (*figure 35b*) and the present temple from the early sixth century (*figure 35a*).

OLD HERAION[286]

Remains of an earlier temple were found beneath the existing Heraion. Under the floor of the extant opisthodomos, remains of an earlier wall built of large cobbles extended to the flanking walls of the later cella. These earlier walls are believed to lie directly underneath those of the later cella so that the two temples had the same cella width.

Because the Old Heraion was situated directly beneath the extant Heraion, it is difficult to ascertain the plan and details of it. Some believe that many of the features of the standing Heraion were copied from its predecessor, so their restored plan does look very similar to that of the later temple (*figure 35b*).

This non-peripteral temple had walls of mud-brick on top of a rubble socle. The temple was restored to approximately 10 x 40 m, with a cella length of a hundred Greek feet (*c.* 32.6 m) making it a Hekatompedon. Although there were no traces of an opisthodomos, a pronaos, of approximately twenty Greek feet equal to *c.* 6.52 m, seems to have existed at the east end. There has been speculation that two columns stood in antis in the pronaos. As for the interior, many see it as having the same plan of tongue walls alternating with wooden columns as the later temple. This arrangement would have created five equal niches, each of twenty Greek feet; the first four pairs of which would have had a central wooden column between the spur walls. The last niche at the rear possibly had three wooden columns across the back of the cella. A side door in the northwest corner of the cella may also have existed.

Although no remains of a terracotta roof can be necessarily associated with the Old Heraion, hip tiles and Argive type undecorated three-peaked antefixes may

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[286]Dörpfeld (1935) 137-151, figs. 27-36, pls. 5, 17; Riemann (1946-7) 48.

have topped this building.[287] These appear to have been the earliest fragments of the plain Argive type antefixes (*figure 16a*). One was built into foundations of the Sikyonian treasury *c.* 600 BC; others were from a well which was filled in the third quarter of the seventh century.

The temple was destroyed in a fire which was attested by ash deposits. Dörpfeld and Dinsmoor believed its construction dated to the end of the eighth century, Robertson assigned it to the early seventh century, and Gruben to the mid seventh century. A terminus post quem for the date of the temple was provided by some Protocorinthian sherds and a bronze statuette (of a warrior or Zeus) from the second half of the eighth century found under the foundations of the Old Heraion. The temple could then not have been built before the late eighth century.

HERAION[288]

The well-known and well-preserved Heraion is a large monumental Doric temple (*plate 29*). The front of the peripteral temple faces due east. The overall dimensions of the stylobate are 18.75 x 50.01 m. Most of the temple is preserved except for the upper part of the walls, the interior supports, and the entablature. The foundations, stylobate, peristyle, wall socles with orthostates, threshold for the doors, toichobate, cult statue base, interior capitals, roof tiles and revetment have survived, as well as evidence for wooden door jambs, wooden antae, and mud-brick walls.

The foundations consist of ashlar blocks, scalloped blocks, and the Old Heraion's foundations. Stone foundations were laid underneath the peristyle, the cella walls, the inner colonnade, the inner piers, the columns of the opisthodomos, and the columns of the pronaos. The two-stepped stylobate of the peristyle is intact except for the southwest corner where both steps are missing. At points where columns are missing, a crescent-shaped cutting is found. Other cuttings occur on the stylobate of the peristyle but only along the south and east sides. The exterior

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[287]Heiden (1990) 42, pl. 3a-b.

[288]Kalpaxis (1975) 83-96, figs. 1-6, pl. 24; Mallwitz (1972) 138-49, figs. 108-117; Herrmann (1972) 92-97, figs. 58-63; Eckstein (1969) 85-97, pl. 4; Mallwitz (1966) 310-376, figs. 1-45; White (1965) 178; Riemann (1946-7) 30-54; Dörpfeld (1935) 161-185, figs. 39-48, pls. 5, 9-16; Curtius and Adler (1892) 27-36, 168-169, 190-192, figs. 1-5, 14, pls. 18-23, 98, 115-116.

colonnade has 6 x 16 columns. The intercolumniation is greater on the facades than on the flanks (averaging 3.56 versus 3.26 m).

Thirty-three of the forty columns still have lower drums in situ, all of which are set back a few cm from the edge of the stylobate. One column has sixteen flutes; the rest have twenty. It appears that the columns were originally of wood and then replaced by stone over the course of centuries. Pausanias (V.16.1) saw a wooden column still standing in the opisthodomos. The differences between the columns are in type of stone, diameters, use or lack of entasis, thickness of the covering stucco, number and depth of the flutes, shape of the capital, and way the drums were pieced together. The capitals vary greatly in the size of the abacus and echinus, execution of the necking rings, proportions, workmanship, quality, attention to detail, and profile of the echinus. Columns were erected at different times ranging from the sixth century to the Roman period. They may have been dedications by cities since stelai were inserted into some that are still standing. As for the entablature, no trace has been found suggesting it was made of a perishable material such as wood.

The stylobate in the pronaos is fairly intact except for the centre of the floor (*plate 31*). The lowest drums of the two columns in antis are in situ. On the stylobate are the cuttings for pivot holes of the door poles, the semicircular marks for the door rollers, and the holes for locking the doors into the stone floor (*plate 30*). The jambs of the doorway were encased with timber (*plate 31*). It is possible that the wooden doors were covered in bronze since thin sheets and rosettes were found. Iron nails for securing the wood and possibly the bronze are among the remains. The antae were also encased in wood as shown by cuttings for wooden planks in the socle (*figure 37*).[289]

In the opisthodomos, part of the stylobate is missing as well as traces of the two columns and most of the flooring (*plate 32*). One of the original oak columns survived to Pausanias' day (V.16.1). That would explain its absence now; the other's fate is unknown. A series of cuttings on the stylobate is probably for a metal grille and door to create a storage facility in the opisthodomos. The antae of the opisthodomos were also encased in wood (*plate 32*).

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[289]Mallwitz (1972) fig. 110.

The only parts of the cella walls that still exist are the three stone courses on the interior and the orthostates on the exterior both of which rest on a toichobate (*plates 30 and 33*). An abundance of mud around the base of the cella walls, the preservation of only three courses, and the total lack of any more wall blocks shows that the upper parts of the walls were of mud-brick. The interior of the wall has three courses of ashlar blocks tightly fitted together without clamps or dowels and arranged so that the joints are in the centre of the stone above it and below it; U-shaped holes are cut in the top of blocks for levers. The blocks are carefully finished with drafted margins. Originally the blocks were covered with a thin limestone wash and then later covered with plaster in the Hellenistic period.

At eight places in the interior, several features indicate that engaged columns or piers extended into the cella (*plate 33 and figure 36*). At intervals of 6.52 m and corresponding with the position of the exterior columns, the central wall block was cut back at a later date to be flush with the rest of the wall. These few blocks are different from all the rest as their faces expose a gap along the bottom of the blocks showing its original anathyrosis (*plate 33*).[290] This gap was filled with mortar to blend in with the rest of the wall. These particular blocks also lack the drafting around the edges found on all the other blocks. Fortunately a few of the blocks from the third or top course are missing at some of these places showing that in the middle course two stones spanned the wall's width instead of the normal one. Along with these blocks, there were extra strong foundations at these locations. Furthermore, it is at these same eight places that the crescent-shaped cuttings appear on the interior stylobate for columns. All these features indicate that those blocks originally jutted out from the wall as part of piers or spur walls. The spur walls created niches; between each projecting wall was a column on the interior colonnade foundations. The end of the spur walls may have had an engaged column so as to simulate a continuous interior colonnade. The blocks were then cut back to their present appearance when the spur walls were removed during a renovation.

The cella's interior stylobate, higher than the rest of the temple, includes the two long strips that carried the inner colonnade and ends of the spur walls, seven of the eight stones beneath the spur walls, and a section of the middle aisle paving

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[290]Mallwitz (1966) figs. 5-13.

(*plate 30*). On the interior stylobate where the wooden columns stood there are crescent-shaped cuttings all of which face west and are situated on the western edge of where the columns were placed. The crescent cuttings were used for levering the wooden columns into place. Near some of them, a square hole was cut corresponding to the centre of a column. Three small Doric stone capitals (*plate 34*) found near the temple probably belonged to the interior stone columns that replaced the wooden ones, but the date of the substitution is unknown.

Other features of the interior include a flat ornamented ceiling as implied by Pausanias (V.10.4). At the back of the cella is a large limestone cult statue base, measuring 4.10 x 1.40 x 0.40 m, panelled on the front with marble rosettes.[291] Most of the paving stones have disappeared within the interior as well as around the pteron, pronaos, and opisthodomos. There are remains of later stone flooring from when the interior was renovated.

The temple's roof was covered with Laconian-type terracotta tiles, all of which have a black wash.[292] The cover and pan tiles taper so as to fit over one another. A small hole at the top of the cover tiles secured them to the roof with a nail. Flat eaves tiles with drip edges lined the edge of the roof. The ridge had curved tiles with semicircular openings on the sides for inserting cover tiles; the ridge tiles interlock with one another for a secure fit. There is no evidence of a raking sima.

Richly painted and moulded semicircular antefixes, which have a diameter of 0.40 m, lined the eaves (*plate 36*).[293] The antefixes have a larger circumference than the cover tiles they fronted and extended past the bottom of them. They are decorated with a moulded and painted rosette in the centre and tori and gadroons around the edge. There are two different types of antefixes, but their differences are only ornamental and not of dimensions, clay, or technique. The two probably alternated along the roof line. Although these Heraion antefixes have the same shape as antefixes in Laconia, they are decorated quite differently. This must be the

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[291]Mallwitz (1966) figs. 14-15.

[292]*Olympia Museum*. Winter (1993) 134-137, 144-147, fig. 14; Mallwitz (1972) 143, fig. 114; Curtius and Adler (1892) 168-169, pl. 98.

[293]*Olympia Museum IL2-5,7,9,11-12,27-28,41-43*. Winter (1993) 137, fig. 14; Mallwitz (1972) 143, fig. 114; Yalouris (1967-8) pl. 8; Curtius and Adler (1892) 191-192, figs. 4-5, pls. 98, 116.

result of the artisans using the shape, which was a natural progression from the curved cover tiles, but employing their own decoration. No examples in Laconia have moulded rosettes at the centre. Consequently, the Olympian antefixes should be seen as a local phenomenon not a Laconian import.

Two enormous central disc acroteria survive. They are shaped to fit the apex of the roof (*plate 37*).[294] The best preserved has a restored width of about 2.40 m; the other was slightly larger, so Winter assigned it to the eastern facade.[295] The disc was attached to a ridge pole cover tile strengthened by clay struts and had an air vent in the centre. The decoration is of concentric circles of mouldings, namely tori and gadroons, and painted patterns including scales, steps, chevrons, hooked triangles, and tongues. There is much use of polychromy, incision, and a compass. The outer edges have a dentillated border. The disc acroteria are reminiscent of those found in Laconia which have the same disc shape and decoration. But several of the features of the Heraion disc as well as those at Bassae in Arcadia raise the question as to whether they are Laconian imports. The step pattern on the Heraion and Bassae discs is found only on the Athena Chalkioikos disc from the Spartan Acropolis. The hooked triangle pattern is actually not found on any of the Laconian discs or even the Bassae disc. Furthermore, the Heraion and Bassae discs are several times larger in size than any of those found in Laconia. These discs were then probably not manufactured in Laconia and exported to Eleia and western Arcadia, but instead were local imitations.

A few remains recovered in the excavations may have belonged to the decorative system of the temple. A ring of pendant bronze leaves was apparently nailed under the echinus of wooden columns which suggests that the columns were of the Doric order merely rendered in wood. Bronze plaques perhaps covered wooden metopes or doors. Stone sculptural fragments of a lion's paw and a large head possibly of Hera or a sphinx have been at times associated with the temple. It is not known whether any of these sculptural fragments had a role in a sculptural

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[294]*Olympia Museum*. Winter (1993) 136; Mallwitz (1972) 143, fig. 115; Yalouris (1972) 85-98, fig. 1, drawings 1-3, pls. 37-40; Yalouris (1967-8) 57-65, pls. 9-12; Curtius and Adler (1892) 190-191, figs. 1-3, pl. 115.
[295]Winter (1993) 136.

programme for the temple at all. In particular, the large stone head (*plate 35*) once identified as that of the cult statue of Hera is widely believed now to be of a sphinx.[296] It is asymmetrical and was found in front of the Palaestra, therefore making it unlikely that it decorated the pediment or formed part of the cult statue.

The date of the Heraion is around 600-580 BC according to sherds found below its foundations and the style of the roof terracottas. Indeed the date of the architectural terracottas, which are based on Laconian examples, is not clear at all since most disc acroteria cannot be securely dated in Laconia. Fortunately, a Corinthian alabastron with two heraldic lions was found under the peristyle foundations.[297] This of course not only provides a terminus post quem for the laying down of the foundations but suggests the roof terracottas at Olympia should be dated to the period around the end of the seventh or beginning of the sixth century.

PRASIDAKI

Near the village of modern village of Prasidaki, Yalouris excavated a Classical temple from a site which may have possibly been ancient Lepreon. The cult was active in the Archaic period judging from the votives recovered at the sanctuary. The city of Lepreon in the Archaic period was invaded by the Lacedaemonians; they were then fined and barred from participating in the Olympic festivities until they withdrew from the area.

EARLY ARCHAIC REMAINS[298]

Among the Archaic finds was a fragment of a moulded and painted disc acroterion perhaps for a temple of the Early Archaic period that preceded the Classical one.

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[296]Ridgway (1993) 128, 183-184, fig. 44 for synopsis of views; Stewart (1990) 113.
[297]Amyx (1988) vol. I, 61 # 13 dated the pot to the Transitional period *c.* 630-615 BC by the Dolphin Painter. Searls and Dinsmoor (1967) 67, fig. 3; Dörpfeld (1935) 211, fig. 55.
[298]Yalouris (1971) 245-251, fig. 10.

ANALYSIS OF THE EARLY ARCHAIC TEMPLES OF ELEIA

INTRODUCTION

The two temples at Olympia are unlike other Archaic Peloponnesian temples in that they were set up in a Pan-Hellenic sanctuary which had buildings incorporating many architectural styles from elsewhere in the Greek world, particularly Magna Graecia. At least one of the treasuries, the Gelan of *c.* 600 BC, was contemporary with the Heraion. It would be perfectly reasonable to expect the Heraion's design to have been influenced by these different architectural styles. As it turns out, the architecture in Eleia in the seventh century was dominated by the Argives. Around 600 BC, the Eleians developed their own style at the Heraion. Local designers and craftsmen probably were used in the design and construction of the Heraion considering that this was also the case for the Classical temple of Zeus.

Some of the features of the Old Heraion and the extant Heraion appeared at places outside of Eleia particularly in Arcadia and Laconia. A disc acroterion at the Early Archaic Bassae temple was similar to those from the Heraion and Prasidaki. Since the Bassae acroterion is unlike most found in Arcadia, it and the Heraion disc should be seen as having been influenced by Laconian examples, some of which adorned nearby temples in Messenia. Because the Heraion had a Laconian-type roofing system and disc acroteria with similar form and decoration, the Lacedaemonians have been credited with their manufacture. However, as they are unlike Laconian discs in one very important factor, namely size, the Laconians should instead be credited with supplying nothing more than influence and inspiration.[299] The same is true for the Heraion's antefixes which were semicircular but whose decoration was unlike anything found in Laconia. There are simply no other features of this temple which could be seen as having been influenced by Laconia.

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[299]Width at top of pan tile: 0.59 m from Heraion at Olympia versus 0.33 m from the Artemis Orthia sanctuary in Sparta; width at top of cover tile: 0.26 m at Olympia versus 0.21 m at Sparta.

PLANS

Only one of the three preserved temples, the extant Heraion, had a peristyle which was set on a two stepped stylobate. All three temples had a pronaos with columns in antis; only the Heraion had an opisthodomos. The Kombothekra and possibly the Old Heraion temples had an adyton like their neighbours to the south in Arcadia. In the cellae at both Olympia temples, spur walls alternated with wooden columns to form the interior supports needed. The smaller Kombothekra temple had less of a width to span and thus had no internal columns. The plan of the cellae at both Heraions were practically identical except that where the Old Heraion had an adyton at the rear, the extant Heraion had instead an opisthodomos.

CONSTRUCTION TECHNIQUES AND MATERIALS

The two earlier temples had rubble socles topped with mud-brick. The extant Heraion has a socle of ashlar blocks and orthostates lining the exterior of it; the upper walls were built of mud-brick. Almost all stones from the Heraion are cut ashlar blocks even for some of the foundations. Wood was used for doors and their casings, antae, ceilings, entablatures, decoration, and columns. Terracotta tiles and revetment crowned the roofs.

THE DORIC ORDER

Wooden columns were used in antis at all three temples as well as in the interiors at the Heraion and the Old Heraion, the opisthodomos at the Heraion, and the exterior colonnade at the Heraion. The Heraion columns were gradually replaced with stone columns some as early as the first half of the sixth century (*figures 41a-c*). The same was true at Kombothekra where stone columns replaced wooden ones at the end of the sixth century (*figure 41d*). Since no stone members of a Doric frieze have been recovered from Olympia, the Heraion probably had a wooden entablature until the temple was disused. Further evidence of the Doric order was a terracotta Doric frieze from Elis.

ARCHITECTURAL DECORATION

No evidence of decoration survives from Kombothekra or the Old Heraion. At the Heraion, the walls were covered with white plaster and bronze probably covered the doors and wooden capitals. The few pieces of stone sculpture have at times been assigned to the Heraion. The wooden entablature may have been painted, and even wooden sculpture may have adorned the temple.

ROOFS

Both Corinthian and Laconian roofing systems were found in Eleia. In both the city of Elis and its pan-Hellenic sanctuary at Olympia, a variety of roofs existed influenced from Magna Graecia. The Archaic treasuries at Olympia, most of which were built by Greek colonies in Magna Graecia, show that their owners exported their local roof styles. At the city of Elis, sima fragments from the first half of the sixth century are similar to those from Corcyra and Magna Graecia. The Western Greek influence on the area around Olympia should be expected as their ornate roofs in the Panhellenic sanctuary were probably admired and hence copied or commissioned for buildings at the sanctuary's supervising city.

The existence of the Argive type undecorated three-peaked antefixes (*figure 16a*) in two sanctuaries in Eleia probably coincides with the influence that the Argives had over the area and their alliance with Pisa during parts of the seventh century. The use of this roof type suggests that those structures were designed or built by Argives. One of the earliest Argive type antefixes comes from Olympia dated at the latest to the third quarter of the seventh century. Although it is merely speculation, these antefixes may have covered the Old Heraion.

Constructing a roof with Laconian type tiles on the Prasidaki temple and the Heraion does not necessarily mean that Laconia had any control over the sanctuaries even though they were allies of the Eleians. The Eleians may have either admired the Laconian roofing system or adopted their ally's distinctive roof as a form of propaganda and goodwill. Either way the disc acroteria and antefixes follow the typical Laconian shape but their decoration is quite unique to the Heraion.

Although a typical roof style cannot necessarily be identified for Eleia, the decoration of the Heraion antefixes and acroteria are different enough from those in Laconia to make it clear that they were in effect part of their own local style.

CONCLUSION

Although we have only a few Early Archaic temples in Eleia, the uniqueness of the Heraion should be viewed as a style developed locally. In particular, the arrangement of interior supports and the architectural terracottas are unlike those elsewhere. It was the largest temple in the Peloponnese until the Late Archaic temple of Apollo at Corinth was built in the third quarter of the sixth century. If the Old Heraion had a similar plan, the local style could have been established in the seventh century.

CHAPTER SEVEN: ACHAIA

The ancient region of Achaia had approximately the same boundaries as the modern district (*figure 38*). The majority of the land is mountainous even right up to the coast. During the Archaic period, the major economic and political affiliation seems to have been with nearby Corinth owing to its proximity and to judge from the existence of Protocorinthian and Corinthian pottery at many Achaian sites. This is in contast to the Geometric period when there was little contact with Corinth, and this only occurred at the coastal sites.[300]

Very few sites in Achaia have been systematically excavated. Of those, only one has unearthed an Early Archaic temple.

REMAINS AT SITES

AIGEIRA

Located along the coast west of modern Derbeni, Aigeira was inhabited from the Mycenaean through the Hellenistic periods. The site consists of two areas, an acropolis and a plateau below. Remains of the Mycenaean occupation as well as two post-Mycenaean cult buildings were uncovered on the acropolis.

Of the Iron Age buildings, the smaller had a pronaos and cella which lies partly beneath the later larger temple.[301] This smaller structure may have been a cult building or a house for royalty built in the eighth century BC. The excavator believed that the original building resembled the temple model from the Argive Heraion.

EARLY ARCHAIC TEMPLE[302]

The temple, measuring about 6 x 20 m, may have been the temple of Artemis-Iphigenia as mentioned by Pausanias (VII.26.3-4). The lower walls and

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[300]Morgan (1988) 323 and 329.
[301]Alzinger (1985b) 426-430, figs. 24, 25a-b; id. (1983) 36, fig. 2b; id. (1981-2) 9.
[302]Gogos (1986-7) 119-127, fig. 1-3; Alzinger (1985a) 11; id. (1985b) 430-451, figs. 3, 24-39; id. (1984) 15; id. (1983) 36-40, figs. 1-5; id. (1981-2) 9-12, figs. 1-2; Touchais (1981) 803; H.W. Catling (1980-1) 22; Touchais (1980) 614-617; H.W. Catling (1979-80) 37; Alzinger (1976) 162, fig. 2.

foundations survived from all four sides of the temple (*figure 39*). The east-facing temple was non-peripteral but may have had an inner colonnade along the central axis.

Fragments of architecture were discovered in a cistern, including Corinthian tiles, terracotta votive capitals and columns, and Late Archaic antefixes and acroteria. The roof was repaired or replaced in the late sixth century with the Corinthian tiles, antefixes, and acroteria. These decorated terracotta revetment were almost identical to those at the Late Archaic temple of Apollo at Corinth.[303]

The temple seems to have been built in the second half of the seventh century;[304] it was reroofed or remodelled in the late sixth century. The temple was destroyed by the Hellenistic period when the cult was moved down to the city in the second century BC.

Although the Late Archaic roof clearly imitated those in nearby Corinth, the lack of all architectural features characteristic of the Corinthian style from the Early Archaic period suggests that the temple was not influenced by Corinth when it was first built. The few remains of the temple do not give enough information to determine if either it had its own style or it followed one of its neighbours.

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[303]Alzinger (1985b) 431-444, figs. 29-39; id. (1984) 15; id. (1983) 38, figs. 3-5; id. (1981-2) 9-11, fig. 2; id. (1976) 162, fig. 2.
[304]Alzinger (1984) 15; Alzinger (1983) 36; Alzinger (1981-2) 9.

CHAPTER EIGHT: REGIONAL STYLES OF THE EARLY ARCHAIC TEMPLES IN THE PELOPONNESE

INTRODUCTION

Temple architecture in the Peloponnese of the seventh century through to the mid sixth century was clearly not standardised. Instead the buildings differ greatly in this early period of development with similarities grouped in a particular region so that regional distinctions are evident. Religious architecture did not have a single plan and style that had to be copied. Architects or builders had design freedom to some extent although the regional nature of some of the features indicates that local guidelines existed. Temples with similar features within a particular area are likely to result from local schools of builders who were responsible for more than one project in a region, who were collaborating with other local builders, or who followed established local architectural traditions.

REGIONAL CHARACTERISTICS

The location of temples in the landscape seems to vary from one region to another. Temples built on mountain or hill tops were the norm in Arcadia, the Argolid, Achaia, and Laconia. In those areas, the site chosen for a temple usually commanded a prominent position and a view of the surrounding countryside. The majority of these temples were erected in sanctuaries established in the seventh century so that in this period the preference was to place temples on a high point whenever possible. Another reason for the choice of site was its religious significance as many temples were erected at sanctuaries already in existence. Sites in the Argolid and a few in Laconia were chosen for their association with the Bronze Age. At the Menelaion, for instance, the Archaic shrine was built next to a Mycenaean settlement and dedicated to two heroes from that period. Many shrines in the Argolid were also built near, upon, or in imitation of Mycenaean monuments.

The orientation of temples differs from one area to the next. Those in the Argolid generally face south while those in Arcadia face either north or south. The temples in Corinthia and Laconia mainly face eastwards. The orientation of most temples to the east was therefore established after this period. The reason usually

cited for an eastward orientation, that of the sun rising so as to light the cult statue, either was not deemed important or was not considered at this period in time.

The majority of temples in the Peloponnese were of a small scale only *c.* 5-20 m in length (*figures 15, 20, 28, 33, 35c, and 39*). Immense temples over one hundred Greek feet, *c.* 32.6 m, were built in Corinthia and one each in the Argolid at the Argive Heraion, in Arcadia at Tegea, and in Eleia at Olympia (*figures 3, 15a, 20a, and 35a*); they were *c.* 35-50 m in length and were peripteral. The construction of smaller temples elsewhere in the Peloponnese was not a result of the absence of large prototypes as most post-date the monumental temples of Corinthia. Smaller, non-peripteral temples were built because of economic factors or regional preferences. Most of the cities responsible for constructing temples were not major commercial or religious centres. All of the monumental, peripteral temples were built and administered by the wealthy cities of Corinth, Tegea, Argos, and Elis. There must have been a different motive in Sparta for the small scale temples since the Lacedaemonians had the wealth and incentive to lavishly decorate their temples. The vast amount of architectural sculpture and bronze plaques as well as votive offerings testified at the Artemis Orthia, Athena Chalkioikos, and Amyklaion shrines illustrates Sparta's wealth and interest in decorating their architecture. The Spartans therefore must have made a conscious choice to keep the temples small and to have reasoned instead that it was better to invest in their decoration.

The plans can be strikingly different between regions. For instance, the temples of Corinthia were peripteral and had axial colonnades in the interior. Nearby in the Argolid, temples were generally non-peripteral consisting of a naos and pronaos and some with a few internal columns either down the central axis or lining the walls' interior. Arcadian temples, also non-peripteral, had a pronaos, naos, and sometimes an adyton. Laconian temples had porches with columns in-antis. The temples of Eleia at Olympia are reminiscent of the other monumental temples at Tegea and the Argive Heraion, complete with a peristyle, pronaos, naos, opisthodomos, and parallel internal colonnades.

One of the most striking features of the Doric temple was the peristyle; but only a few Early Archaic Peloponnesian temples had them. In Corinthia the peristyle was standard for temples whereas elsewhere in the Peloponnese it was not.

Two other temples, the Argive Heraion and the Olympian Heraion, were without a doubt peripteral; the Tegean and Athena Chalkioikos temples may also have been peripteral. There is no detectable pattern for the configuration of columns.

The majority of temples in the Peloponnese had simply a cella with a columnar porch. The existence of a pronaos is fairly standard throughout the Peloponnese. The popularity of the pronaos in the Peloponnese contrasts with the virtual absence of an opisthodomos. There is only one identifiable opisthodomos in the Peloponnese at the Heraion at Olympia which was approximately the same size as the pronaos. Rear rooms do exist on some temples particularly those in Arcadia. The adyta in Arcadia were either separated from the naos by a wall or columns. Only a few other adyta have been proposed in the Peloponnese at Longa B in Messenia and at Nemea.

Interiors were generally left free of supports in Laconia, Arcadia, Messenia, and the Argolid mainly because of the lack of great width. Where the width of the temple was large, either one or two rows of columns supported the ceiling. A single central row was found at Isthmia whereas a double colonnade existed at Tegea and Olympia. The other three monumental temples did not leave a clue as to their interior arrangement; but based on their size and the Greek tendency to be safe when trying to roof large spans, they too must have had one or two rows of interior columns. Columns were not only used for support but also visually to divide spaces. At Pallantion C, a pair of columns stood behind the cult statue base to divide the cella from the adyton behind.

Temple furniture cuttings appear in great numbers in Corinthia yet rarely elsewhere. Cuttings for such objects as altars, tables, drains, balustrades, statue bases, and perirrhanteria have been found at the Asklepieion temple in Corinth and the Isthmian temple. Built-in temple furniture was found in both Arcadia and the Argolid in the form of benches or shelves around the naos or adyton walls. Cult statue bases were, of course, standard but many were lost or removed so their original positions are not necessarily known, although almost every known cult statue was placed towards the rear of the cella in the centre.

The study of the temple plans reveals that differences in scale and layout were primarily regional. It should also be noted that materials and techniques used in construction were locally distinct.

The basic materials available to Greek builders were wood, clay, thatch, and stone. Before the Early Archaic period, builders employed all four of those natural products to create various structures. Temples of the Geometric period used rubble and worked stone for terrace walls, socles, thresholds, and column bases. Clay was combined with straw and then shaped in moulds to create mud-bricks. Grasses were also used for thatching roofs. Wood was used for columns, roof beams, ceiling rafters, doors, and wall piers. The architecture of this period was probably similar to half-timbering with its wooden framework and mud-brick.

The technology of simple construction was therefore already in place for the builders of the Archaic period. What distinguishes Early Archaic architecture from its Late Geometric predecessor are further advancements in technology. One such advancement was the ability to quarry stone and cut blocks to create ashlar masonry. The first fully stone wall known to have been constructed was at Isthmia in Corinthia. Despite this advancement in the first half of the seventh century, it was not adopted immediately but took almost a century before the next fully stone walled temple was built and that was at a colony of Corinth, Corcyra. Another innovation was the terracotta tiled roof which also occurred in Corinthia. This innovation spread quickly throughout the Greek world. An increase in the scale of buildings was a further important development in the seventh century, but not all cities could afford to build a large temple. Peristyles became a common feature on the larger temples of which there were about a dozen in Greece as opposed to only a couple in the period beforehand; yet the peristyle was not a standard feature for temple architecture until the Late Archaic period. It is in the Early Archaic period too when the Doric order was probably created first in wood, its decorative details of column and entablature developing from structural elements.

In the Peloponnese, many of the temples continued to employ the more primitive building practices of mud-brick walls on stone socles, although the terracotta tiled roof was embraced fully presumably because of its more permanent quality and better protection against rain, wind, and fire. The newer innovations

such as worked stone, increase in scale, and peristyles were generally employed on temples built by wealthier cities.

Most of the materials used for building temples were inexpensive and found locally, such as fieldstones, wood, clay for mud-brick and roofs. The use of cheaper materials would also save money on labour since highly skilled masons would not be needed to quarry, transport, and dress blocks. The crudely worked stones used for corners of walls or thresholds would not require a skilled labourer. The use of inexpensive local commodities, both of materials and unskilled labour, must have greatly reduced the cost of construction allowing smaller communities to afford a temple. The temples with dressed blocks were usually from sanctuaries within or administered by wealthy cities which would explain why they could afford stone masons and quarried stone. These cities may have viewed a monumental temple as a vehicle to display their prestige, power, or wealth.

There are a few regional preferences for construction techniques, one of which involves the construction of foundations. The larger buildings of the Early Archaic period are the first to have proper foundations to prevent shifting and settling. Heavy foundations were laid under walls and colonnades rather than for the entire building. Corinthian temples were set on levelled bedrock. The reuse of existing structures for foundations was common in the Argolid as demonstrated at the Argive Heraion, Tiryns, and Mycenae. Elsewhere in the Peloponnese, trenches were dug in the earth and foundations were laid of rubble or cut blocks. At the two largest temples in Arcadia and Eleia, the ashlar blocks of the foundations rested on a layer of fieldstones.

Worked stylobate blocks were laid upon the foundations of the peripteral temples. The stylobates at the Argive Heraion and Tegea were of polygonal masonry; conversely, ashlar blocks were used at the temples in Corinthia and Olympia. Circular cuttings were made into the stylobate blocks for columns at both the Argive Heraion and the Tegea temples. Crescent-shaped cuttings for levering columns into place and dowel holes to secure them existed at the Olympia Heraion and the Tegea temples.

Rubble walls were typically used in Arcadia, Laconia, Messenia, Achaia, and the Argolid whereas dressed masonry was employed in Corinthia and the few

monumental temples scattered throughout the Peloponnese. Most temples had socles either of stacked unworked stones or of two faces of flat stones with smaller stones filling in the core. Clay filled the cracks to bond the stones to one another. At some sites, larger roughly worked stones were used at the corners and at the entrances. Orthostates were also used at the outer facing of the lower part of the wall either rendered rather crudely, as at first Artemis Orthia temple in Sparta, or carefully dressed at the temples at Tegea and the Heraion at Olympia. Sculpted relief panels from Mycenae may have been orthostates similar to those found in Crete. Wall socles were usually topped with mud-brick and wooden uprights sometimes provided a framework and bracing for the mud-brick. At the end of the projecting walls were usually wooden antae, a feature retained from architecture of the Geometric period.

The walls in Corinthia and at the monumental temples were built entirely of dressed blocks or of a worked stone socle topped by mud-brick. At Olympia and probably Tegea, large cut orthostates formed an outer facing for the wall socle. The earliest ashlar walls may be imitating mud-brick as the blocks were cut quite small. Several buildings, namely those in Corinthia, Nemea, and Olympia, were built of isodomic ashlar masonry, the blocks and courses being of approximately the same size. The majority of worked wall blocks have cuttings for lifting or levering, varying from ice-tong shaped cuttings at Nemea, to parallel rope grooves at Corinth and Isthmia, and to U-shaped holes for levers at Olympia. The use of anathyrosis occurs on many of the worked blocks of the peripteral temples. Edge anathyrosis, where only the vertical edges of the blocks are dressed, became the common method for creating a tight joint between blocks in the seventh century masonry. Early sixth century buildings developed the method of band anathyrosis, in which the smooth band was widened along the vertical faces and a horizontal band added. Band anathyrosis was used on the blocks at the Heraion at Olympia. Blocks were not secured to one another by dowels or clamps as no evidence of either exists anywhere in the Peloponnese. Cuttings in blocks for wooden members at the ceiling level are evident at temples in Corinthia and the Nemea temple.

Wood was used extensively throughout the buildings. Besides the wooden beams and rafters used for the roof and ceiling, wood was employed for other

structural purposes. Wood was used for columns, wall piers, entablature, doors, door frames, antae, frames for paintings, and possibly architectural sculpture. The use of wooden piers along mud-brick walls forms a technique referred to as half-timbering which seems to have been common in Greek architecture from at least the tenth century as illustrated by the Toumba building at Lefkandi.[305]

Walls, both mud-brick and ashlar masonry, were usually covered with plaster. The use of plaster on walls is probably a continuing tradition from mud-brick architecture in which the exterior mud-brick walls must have had a covering to protect them from the elements or else they would have quickly eroded. It was especially important for buildings without peristyles as their walls would have been even more exposed and vulnerable to destruction. The use of plaster on ashlar walls and socles would also smooth out the wall surface requiring less effort spent on the final dressing of the wall blocks.

The extent to which temples were decorated in this period is unknown as a result of poor preservation. Walls may have been painted as the evidence of coloured paint on plaster chips was found in debris from the two Corinthia temples. The eighth and seventh century architectural models which had painted decoration may illustrate that walls were richly ornamented when the models were made. It would therefore not be unreasonable to believe that decorated walls continued into the seventh century. As almost all the temples had wooden entablatures, these could have been painted or even have had carved sculpture. Although neither painted nor sculptural decoration has been found for temples in Arcadia, Messenia, and the Argolid, the Laconian temples were lavishly decorated with relief sculpture, bronze relief plaques, and perhaps even pedimental stone sculpture. Another possible sculptural programme may have occurred for the temple at Mycenae where Daedalic relief plaques could have been orthostates, metopes, or totally unrelated to the temple. Temple decoration was also extended to the roofs with painted and moulded antefixes and acroteria.

There were two types of roof tiles, Laconian and Corinthian, used on buildings throughout the Greek world from the Archaic period onwards. Both types

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[305]Coulton (1993) 58. Examples of its use occurred in Archaic Peloponnesian temples at Halieis, Isthmia, Olympia, first Artemis Orthia at Sparta, and Tegea.

of tiles derived from the earlier hipped roofs of the Protocorinthian temples at Corinth and Isthmia. These were combination tiles with a concave pan and convex cover, the same shapes as the Laconian tiles. Their eaves had flattened pans and peaked cover tiles which were the predecessors of the Corinthian type tiles. The prototype for antefixes was the peaked eaves cover profile which gradually developed into the decorated antefix.

The Corinthian type of tiles was used on buildings in Corinthia, the Argolid, and in the seventh century in Eleia. They were also the most common type elsewhere in the Greek world. Although the form of the tiles was the same throughout the Greek world, the shape of the antefixes and their decoration differed between regions. Argive antefixes were typically tri-peaked with painted, stamped, and moulded ornament. Eleian antefixes were similar to the early Argive antefixes in that they were tri-peaked with an undecorated face. In Corinthia, buildings had pentagonal shaped antefixes decorated with palmettes and lotuses in relief.

Laconian type tiles were used on the temples of Laconia, Messenia, Eleia, and Arcadia. Roofs in Laconia, where the shape of the tiles appears to have originated, had tiles with a black wash, carefully painted and incised semicircular antefixes with lunulae, and intricately patterned disc acroteria. The Messenian roofs were very similar probably as a result of the political control by Sparta over the region. The roof at the Olympian Heraion also had tiles with a black wash and semicircular antefixes which were decorated with moulded rosettes. Disc acroteria, similar to those from Laconia but enlarged to enormous size, crowned the pediment of the Heraion. The Arcadian acroteria were similar in shape to the Laconian examples, but the decoration was quite unique. On the other hand, the Arcadian antefixes were bell-shaped with moulded and painted decoration.

Comparison of the antefixes shows that each region had a particular style which is not used elsewhere. For instance, antefixes were tri-peaked in the Argolid, bell-shaped in Arcadia, and pentagonal shaped in Corinthia. Decoration differed, ranging from mythological creatures in Arcadia and moulded rosettes in Eleia, to lunulae in Laconia and areas under its political sphere of influence.

The form of acroteria used on Laconian type roofs had no known prototype in the Protocorinthian roofs. Acroteria were practically non-existent in Corinthia

and the Argolid, but they were almost always present in the western half of the Peloponnese. However they differed greatly in their size and decoration from one region to another, the Arcadian discs being more coarsely made and with less painted detail than those from Laconia. The Eleian discs were larger versions of the Laconian discs with the same intricate detail and careful workmanship.

THE MONUMENTAL TEMPLES

As discussed above, in three of the regions only one temple is truly unlike all the rest and these three have much in common with one another. These are the monumental temples of the Argive Heraion, the Olympia Heraion, and Athena at Tegea. Like their predecessors in Corinthia, they are the true forerunners of the Late Archaic and Classical temples with which we associate the Doric order. It is their size and use of colonnades which makes them stand out amongst their contemporaries and which became standard for Doric temples. Another important distinction between these monumental temples and their smaller counterparts is the use of dressed stone for the stylobate and walls. These temples do not represent the typical temple in the Early Archaic period, rather they are exceptional as the majority of temples were small and non-peripteral.

All of the Peloponnesian peripteral temples were built by large wealthy cities, some even under the rule of tyrants. Of the five monumental temples in the Peloponnese, two belonged to sanctuaries where the Panhellenic games were held. There were several other seventh century peripteral temples elsewhere in the Greek world: the temples at Eretria, Samos, Smyrna, and Thermon C.

Monumental temples shared much in common beyond their size and use of colonnades, despite being in different areas. They had continuous stylobates of worked blocks upon which stood wooden columns. The stylobate was always one course, sometimes with an extra step at the front. The stylobate blocks were usually irregular in length, were of ashlar or polygonal masonry and did not correspond to the column spacing. The stylobates show that the timber columns were typically 0.60-0.80 m in diameter. This was a considerable increase in scale compared to the small wooden columns of the earliest peripteral temple at Samos which were *c.* 0.35 m in diameter. Interior columns were also of wood whether

they were free-standing or engaged. At Isthmia, Olympia, and Tegea wooden or stone piers lined the interior or exterior walls. The cella walls were composed typically of a stone socle surmounted by mud-brick; on the other hand, the Corinthian temples had walls built completely of stone.

Only the wealthiest cities and greatest sanctuaries built the larger temples.[306] The Early Archaic period saw a general rise in prosperity in Greece helping to fund these larger building programmes. Another important aspect of this period was the rise of tyrannies particularly in the Peloponnese. The tyrants may have been interested in enhancing their prestige by large scale public works and splendid dedications to sanctuaries. The sponsorship by tyrannies was certainly crucial for the larger and more sophisticated buildings. Although the dates that they ruled are not precisely known, the first tyrants all seem to have sprung up around the middle or later part of the seventh century in a number of states in the Peloponnese: Argos, Corinth, Sikyon, Epidauros. None of the temples can be associated definitely with any of the tyrants, but they were known for instigating building and artistic projects. For instance, the Corinthian Treasury at Delphi, the Diolkos, and the "chest of Kypselos" were probably commissioned by Periander during his reign at Corinth in the early sixth century. In the early sixth century, Kleisthenes, the tyrant of Sikyon, dedicated a number of buildings at Delphi. The ambition and sponsorship of the tyrants is likely to have been a significant factor in the rise of monumental architecture.

THE DORIC ORDER

The use of columns and colonnades pre-dated the invention of the Doric order. The earliest evidence for a wooden peristyle was at Lefkandi in the tenth century. The wooden posts were sunk into the ground and would have created a sheltered passage around the sides and end of the funerary building; a colonnade was not provided for the front. The first known use of a peristyle around a temple occurred at the Heraion on Samos in the eighth century. Its thin wooden columns were set on square stone bases. There was a similar arrangement at the eighth

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[306]Akragas, Argive Heraion, Athens, Corinth, Delphi, Didyma, Ephesos, Eretria, Isthmia, Olympia, Samos, Selinous, and Tegea.

century temple of Artemis at Ephesos where the wooden columns rested on circular stone bases. None of the presumably wooden capitals of these temples survive. The earliest stone Doric capitals which are preserved seem to date around 600 BC.

It is difficult to determine whether the wooden peripteral temples of the seventh century were of the Doric order. The date of its first use depends on whether one believes it had originally a timber prototype or prefers the theory that the Doric order was a result of contact with Egypt or the Near East. If the Doric order was a borrowing from another culture then all of the temples in the Peloponnese before the sixth century as well as a few afterwards, such as the Heraion at Olympia, would have been non-Doric. On the other hand, if one agrees with the theory of a timber protoype, then many, if not most, of these Peloponnesian temples would have been of the Doric order which was rendered in wood. The terracotta metopes and triglyphs of the late seventh and early sixth centuries would then be either contemporary with or the predecessors of their stone counterparts; their existence also supports the theory that the Doric order had been invented beforehand in another material. The debate about the origin of the Doric order will be discussed in the following chapter. Either way, the extant stone Doric capitals from sites in the Peloponnese which may have belonged to the some of the Early Archaic temples must be placed in the context of other early stone Doric capitals.

Dating early stone Doric capitals is not simple since few, if any, came from a datable deposit or were clearly associated with a securely datable structure. The first stone Doric capitals that can be dated belonged to the temple of Artemis at the Corinthian colony of Corcyra from the first quarter of the sixth century (*figure 43a*). This temple was the first known stone Doric temple. In the second quarter of the sixth century, a temple of Apollo was built at another Corinthian colony of Syracuse in Magna Graecia (*figure 43b*). The next somewhat datable temple was that of Apollo at Corinth *c.* 540 BC (*figure 43c*). These three temples which were built at intervals of about twenty years are particularly handy for this study as they came under the political and cultural influence of Corinth and are spread out fairly evenly in date to give a sample of what capitals looked like at a particular time.

The capitals developed from a flat spreading echinus to one which sloped into the shaft and whose upper profile became less full (*figures 43a-c, 45, and 46).*

The earliest Doric capitals, from the first quarter of the sixth century, had a wide-spreading echinus which was virtually flat underneath (*figure 45a*). The height of the echinus was usually about equal to that of the abacus. The neck of the capital sometimes had carved decoration, such as leaves or petals. The profiles of the earliest capitals showed a great distinction between the shaft and the capital (*figure 45a*); in later capitals they were combined to create a smooth curve (*figure 46b*). As this was the period of experiment and the capitals differed widely, it is very difficult to establish a chronology for them in the early sixth century. Towards the end of the century when almost every temple and stoa employed the stone Doric order, there was a greater tendency to establish a proportional system and standardise the handling of the decoration.

Since all the dated Doric capitals are associated with stone Doric temples of the sixth century, the capitals found at sites in the Peloponnese are very hard to date or assign with any certainty to a specific structure. The majority of capitals found in the Peloponnese were given dates ranging from the mid seventh to the end of the sixth centuries all based on their style. The Peloponnesian capitals that may have dated to the Early Archaic period or shortly afterwards have been found at Artemis Orthia, Kokkinia, Mavriki, Kombothekra, Longa, Olympia, Troizen, Tiryns, Argive Heraion, Amyklaion, Phoiniki, Mantinea, and Corinth (*figures 40-43*). As there are no capitals which can be dated with any certainty to the seventh century, those capitals with a flat spreading echnius could have dated to the earliest decades of the sixth century as they are very similar in profile to those from the Corcyra temple of Artemis (*figures 43a*). Profiles of capitals may not have changed as gradually as some think and half a century may have been adequate time for them to develop from the flat spreading type to the less pronounced swell of those from the mid century temple of Apollo at Corinth (*figure 43c*). As Doric capitals cannot always be dated accurately judging from their shape at this early stage, they cannot be used necessarily to date a building.

CONCLUSION

There are several features which can define temples as being from a particular area. For instance, the use of ashlar masonry, fully stone walls, and Protocorinthian style roofs were characteristics unique to the Corinthian temples. In the Argolid, location was significant as reverence for the Bronze Age was an important aspect of their religion. In addition, the use of tri-peaked antefixes was a part of the Argive style that was exported to areas under its influence. Likewise, the roof tiles, antefixes, and acroteria of Laconia were so distinct that the existence of similar elements elsewhere in the Peloponnese can be explained by the political role that Sparta played. The Lacedaemonians thus exported their style of roof to areas which they either controlled, such as Messenia and Kynouria, or with which they were allied. Arcadia also had distinct roof revetments and a feature of the plan, the adyton, which was common only in that region.

In addition to the general styles of each region, the monumental, peripteral temples had a greater role to play in the architecture of the Peloponnese. Since the technology used in these temples exceeded that of the smaller temples, their character was quite different from the typical temples within their area. Instead they had similarities with each other and with the few other peripteral temples elsewhere in Greece.

Finally, most of these temples were probably of the Doric order although the details would have been rendered in wood. The early sixth century saw the introduction of the stone Doric capital which developed from a flat, spreading echinus in the earliest phases to a gently curving form in the second half of the sixth century.

Just as pottery, sculpture, and minor arts had regional variations, so too Early Archaic religious architecture clearly had differences based on the region in which they were located. Architects or builders obviously were not limited to a strict plan, construction techniques, or decoration. They could design a temple that not only served the needs of the cult but had a recognisable local character. Although the regional differences are apparent now, the question of whether the ancients recognised them may be answered by consideration of the evidence from the international treasuries at the Panhellenic sanctuaries. At Delphi and Olympia,

the treasuries were probably designed, decorated, and built by their dedicators as they all tended to reflect the architectural style that was used in their homelands. This then suggests that the ancients were aware of local styles and used them to identify their monuments.

CHAPTER NINE: THE ORIGIN OF THE DORIC TEMPLE

INTRODUCTION

The origin of the Doric order is one of the most important issues in the history of architecture since it represents one of the two systems controlling Greek buildings and, hence, later styles inspired by the Greek models. The origin of the Doric order was first discussed by Vitruvius in the last quarter of the first century BC. The merits of the different orders and styles of architecture were debated during his day to determine the direction that design should take. To support his opinions, he laid out a history of architecture and rules governing the proportions of the different orders. Renaissance philosophers, historians, and architects of the fifteenth and sixteenth centuries revived such issues, particularly that of the origin of the Doric order. Then the rise of Neo-Classicism in the mid eighteenth century spawned two factions, the pro-Greeks and the pro-Romans, who renewed interest in the subject. Debate on the subject over the past century has benefited from the results of excavations. Although archaeology in the future will surely further aid our understanding of pre-Classical architecture, the material that has been excavated in the past century within the Peloponnese may assist with the dilemma now.

The limitations for determining the origins of the Doric order are based on our knowledge of the periods before and within which stone Doric first appears. Poorly preserved remains from these periods are responsible for much of our lack of knowledge. The poor preservation is a result, in some cases, of a replacement temple destroying most of an earlier temple's plan and reusing its materials. Other temples were left to be plundered by ancient or modern scavengers. Still others have not been located or excavated. Another reason for poor preservation is that before the stone Doric order appeared, the peripteral temples were built with perishable materials such as unbaked bricks and timber. It is thus difficult to determine if these wooden peristyles were of the Doric order. Therefore the date and occasion for the inception of the Doric order is not indisputable.

There are two main theories which spawned several sub-theories. The timber origin theory argues that the Doric order reflects a timber construction and decorative system established in the seventh century or possibly earlier. The other

principal theory is that the Doric order was derived from or influenced by foreign architectural forms and buildings. This influence is believed in the main to have derived from Egypt, although others have suggested the Near East as a possible source.

THE TIMBER ORIGIN THEORY

The principal source for this is the treatise of Vitruvius, De Architectura, which, while written *c.* 30-25 BC, is likely to represent a compilation of considerably older theories and traditions. It covers, in no very systematic fashion, the beginnings of architecture, the origins of the different architectural orders, the materials used in construction, the use of modules, the relationship between architecture and nature, the relationship between architectural orders and the human body, the rules of proportions, and guidelines for designing a building. In particular, books two and four contain passages which discuss architecture from the Geometric and Archaic periods.[307]

The theme in the first chapter of book two is how architecture evolved and developed.[308] "At first they set up forked stakes connected by twigs and covered these walls with mud. Others made walls of lumps of dried mud, covering them with reeds and leaves to keep out the rain and the heat. Finding that such roofs could not stand the rain during the storms of winter, they built them with peaks daubed with mud, the roofs sloping and projecting so as to carry off the rain water" (II.1.3). He then proposes that men became more skilled in carpentry enabling them to create finer and grander buildings (II.1.6). This led to more sophisticated structures "with foundations, having brick or stone walls, and roofs of timber and tiles" (II.1.7). This passage roughly corresponds to the type of buildings found in the Early Archaic period. As most of these buildings were destroyed by his time, he would have had very little first hand knowledge of the original buildings. It may be that his knowledge of these buildings was the result of a written or oral legacy that was passed down for generations as being the turning point for architecture. It

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[307]Knell (1991) 44-55.
[308]Knell (1991) 44-46.

seems unlikely that Vitruvius is theorising about this issue as he is so specific and accurate about the types of buildings that were built.

His credibility is further sustained by his conclusion that "observation and application led them from fluctuating and indefinite conceptions to definite rules of symmetry" (II.1.7). This last statement agrees the impression derived from the study of early temples, since they show great variety and suggest that mathematical relationships were not a controlling influence. It is unlikely that the correspondence of archaeology with his passage is just a coincidence; rather it implies that Vitruvius correctly recorded a tradition passed down for six hundred years, or at any rate since the fifth century BC.

Vitruvius' fourth book gives an account of the architectural orders, in the course of which reference is made to their origins:[309]

> ...Doric came first and from early ages. For in Achaea and over the whole Peloponnese, Dorus, the son of Helen and the nymph Phthia was king; by chance he built a temple in this style at the old city of Argos, in the sanctuary of Juno, and, afterwards, in the other cities of Achaea after the same style, when as yet the determination of the exact proportions of the order had not begun. (IV.1.3)
>
> ...to Panionian Apollo they [the Ionians] established a temple as they had seen in Achaea. Then they called it Doric because they had first seen it built in that style. (IV.1.5)
>
> [translation by Granger (1931)]

The second chapter of the fourth book proposes that the details of the Doric order were in imitation of previous timber structures:

> Thus each and every detail has a place, origin, and order of its own. In accordance with these details, and starting from carpenter's work, artists in building temples of stone and marble imitated those arrangements in their sculptures, believing that they must follow those inventions. So it was that some ancient carpenters, engaged in building somewhere or other, after laying the tie-beams so that they projected from the inside to the outside of the walls, closed up the space between the beams, and above them ornamented the coronae and gables with carpentry work of beauty greater than usual; then they cut off the projecting ends of the beams, bringing them into line and flush with the face of the walls; next, as this had an ugly look to them, they fastened boards, shaped as triglyphs are now made, on the ends of the beams, where they had cut them off in front, and painted them with blue wax so that the cutting off of the ends of the beams, being concealed, would not offend the eye.

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[309]Knell (1991) 47-55.

Hence it was in imitation of the arrangement of the tie-beams that men began to employ, in Doric buildings, the device of triglyphs and the metopes between the beams. (IV.2.2)

Later, others in other buildings allowed the projecting principal rafters to run out till they were flush with the triglyphs, and then formed their projections into simae. From that practice, like the triglyphs from the arrangement of the tie-beams, the system of mutules under the coronae was devised from the projections of the principal rafters. Hence generally, in buildings of stone and marble, the mutules are carved with a downward slant, in imitation of the principal rafters. For these necessarily have a slanting and projecting position to let the water drip down. The scheme of triglyphs and mutules in Doric buildings was, therefore, the imitative device that I have described. (IV.2.3)

It cannot be that the triglyphs represent windows, as some have erroneously said, since the triglyphs are placed at the corners and over the middle of columns - places where, from the nature of the case, there can be no windows at all. For buildings are wholly disconnected at the corners if openings for windows are left at those points. Again, if we are to suppose that there were open windows where the triglyphs now stand, it would follow, on the same principle, that the dentils of the Ionic order have likewise taken the places of windows. For the term "metope" is used of the intervals between dentils as well as of those between triglyphs. The Greeks call the seats of the tie-beams and rafters οπαι, while our people call these cavities columbaria (dovecotes). Hence, the space between the tie-beams, being the space between two "opae", was named by them μετοπη. (IV.2.4)

The system of triglyphs and mutules was invented for the Doric order...mutules represent the projection of the principal rafters...Neither did the ancients approve of or employ mutules or dentils in pediments, but only plain coronae, for the reason that neither principal nor common rafters tail into the fronts of pediments, nor can they overhang them, but they are laid with a slope toward the eaves. Hence the ancients held that what could not happen in the original would have no valid reason for existence in the copy. (IV.2.5)

[translation by Morgan (1914)]

This last statement, "what could not happen in the original would have no valid reason for existence in the copy", underlies Vitruvius' belief that Doric temples were built originally in wood and every element was translated eventually into stone.

Vitruvius' timber prototype remains the most popular theory for the origin of the Doric order.[310] It coherently explains the individual architectural elements as well as the whole design. His theory is echoed by those of later architects throughout the ages who maintained that the nature of materials can and should dictate the form of the structure; in order words, the Doric temple has the appearance of being created from wood. The Doric order is then essentially an imitation of the forms of nature that are modified when it is rendered in a new material because of necessity and aesthetics. Several scholars have suggested different interpretations for the Doric frieze, all of which are based on their belief that it reflects a wooden original. Cook proposed that the entablature originated from the beams and rafters ending at the cella walls not above a colonnade.[311] Either way, rafters and beams were in different courses just as were the mutules and triglyphs suggesting that the frieze course was an imitation of construction. The traditional belief has been that triglyphs represent the ends of wooden beams.[312] An alternative interpretation is that the beams were reflected in the stone metopes.[313] Others prefer to see the metopes as decorative panels or openings, an idea first discussed and rejected by Vitruvius (IV.2.4).[314] As triglyphs may be the ends of beams, dentils in an Ionic frieze could be seen to have come from the same origin.

Some who accept that the Doric order originated in timber disagree that it had a structural nature. Cook sees the frieze as a decorative band introduced for peripteral temples in the mid seventh century.[315] Some of the elements of the Doric order not only could be built out of wood, but make no sense if they are merely decorative. In particular, the guttae both on the mutules and below the triglyphs on the architrave could have originally been wooden pegs to secure the woodwork. Although it could be argued that the innovator of the Doric frieze wanted other rhythmic elements to coincide with the frieze, these elements are not necessarily used on all Doric temples in the sixth century. The absence of some features, like

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[310]Among its supporters were Broneer (1971) 55; Dinsmoor (1950) 56-57; Von Gerkan (1948-9) 1-13; Washburn (1919) 33-49; Holland (1917) 117-158.
[311]R.M. Cook (1970) 117-119; id. (1951) 51-52 believed that it was originally wooden invented in the mid seventh century but not for structural purposes; he prefered to see it as a decorative band.
[312]Von Gerkan (1948-9) 1-13.
[313]Washburn (1919) 33-49; id. (1918) 434-437.
[314]Demangel (1937) 421-438; id. (1931) 117-163; Washburn (1918) 434-437 was against it.
[315]Cook (1970) 117-119.

mutules and guttae, on some of the sixth century temples may be seen as being not deemed necessary because the order was no longer structural. This would be the most logical explanation of why those elements are present on some but absent on others. If the Doric order had been invented in stone by an individual or team and that design copied, it seems less likely that those copying the design would omit part of it.

Additional evidence for a timber prototype include an ancient reference and renderings on pots. Vitruvius is not the only ancient source who spoke of a timber Doric order. Euripides in *Bacchae* (line 1214) speaks of fastening a head by pegs to the triglyphs of a temple. Surely, the triglyphs would need to have been of wood. He would have had first-hand knowledge since wooden temples would have survived into the fifth century. Furthermore, the cushion capital was already known in the seventh century as shown by its representations on pottery. A Protocorinthian sherd from Perachora shows two Doric capitals with a cushion-shaped echinus; it dates to the middle of the seventh century BC.[316] Another sherd from Vari, attributed to the Nessos Painter *c.* 600 BC, shows a Doric column with a cushion echinus, necking rings, a tapering shaft, and a base.[317] Wooden columns stood on stone bases or surfaces in order to prevent rot. Doric elements were not only rendered in stone since terracotta triglyphs, metopes, and capitals appear from the late seventh and early sixth centuries at Aigeira, Calydon, Delphi, Elis, Gela, Homolium, Metaurum, Olympia, Selinus, Tegea, and Thermon.[318] These predate or were contemporary with the Doric order in stone. The existence of Doric elements in another material supports the view that the order was rendered beforehand in other materials, such as wood. Another very important fact to consider is that all features of the first Doric temples' plans existed in the peripteral temples of the seventh century; no significant innovation was introduced in plan. If the Doric order was invented as a stone order than it would have been likely that the plan of its buildings would have also been innovative in at least a few respects.

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[316]Wesenberg (1971) 51, 59, fig. 111.
[317]Wesenberg (1971) 51, fig. 112.
[318]Dinsmoor (1950) 51-53; Van Buren (1926) xix, 162-163; Alzinger (1985b) fig. 41.

The timber theory has not been universally accepted as a result of several perceived problems. One such problem is the existence of triglyphs on all four sides of the building where beams could not have been laid. Actually the earliest temples had a hipped roof on at least one short side and so would have had beams and rafters projecting to that side. This could explain why triglyphs that were once seen around the ends would be continued around the entablature of pedimental temples. Continuity and symmetry could still be retained. Another complaint is that in some buildings the triglyphs do not necessarily line up with the columns as they would have in a wooden prototype. Examples of this phenomenon existed at the Apollonion at Syracuse, *c.* 565 BC, and the Old Tholos of Delphi, *c.* 580 BC. If the Doric order had been a translation of timber construction, one would expect that the positions of the beams would have been maintained to give the illusion of how it was constructed. Instead these examples may show that when translating to stone it was not deemed important to line the triglyphs up with the columns as their role was now ornamental although originally being structural. In particular, the round Old Tholos at Delphi may have caused enough difficulties in its form that lining up the triglyphs with columns was not considered a priority. An additional difficulty is the difference in the proportions of the wooden temples and those of the Doric order. Some of the earliest stone Doric temples have very squat columns, their height being only four times their lower diameter. For instance, the Apollo temple at Syracuse had columns with a the lower diameter of 2.01 m while their height was only 7.98 m. In contrast, the wooden temples had slender columns typically only 0.60-0.80 m in diameter. Although their height cannot be determined, the spacing of these columns was much greater than those of the stone peripteral temples of the sixth century, three to four times the column diameter versus one and a half to two times. The columns from the first temple of Athena Pronaea at Delphi were very slender, their height being six and a half times their diameter; they were probably "literal copies of their wooden prototypes".[319] The proportions could have easily been altered when translated into stone as a cautious reaction to its use. Even those who accept a timber origin are not completely satisfied that the forms were strictly imitated. As Coulton rightly observes, the

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[319]Dinsmoor (1950) 56, 72-73, fig. 24.

beams would have been too massive and the ceiling level too low if it is a literal translation from wood; he suggests instead that the stone Doric frieze was "placed so as to be reminiscent of a wooden structure with repeated beam ends".[320] A lack of precise correspondence with the timber colonnade shows that there may have been some alteration of the forms for the sake of aesthetics since there was no longer a structural need for the elements.

The timber origin theory is based on the idea that the structural effect of the order derives from imitating the form of the construction of an earlier period.

FOREIGN INFLUENCE THEORIES

Vitruvius' timber origin theory for the Doric order was widely accepted until around the mid eighteenth century when the proposal that it had been derived from Egypt gained support. This theory argues against the wooden peripteral temples being Doric as the Doric order was to have emerged fully coherent in stone.

One source of inspiration could be from the Near East. Communication with the Near East was established by Euboia in the ninth century BC. By the seventh century, a Greek trading post was set up along the North Syrian coast at Al Mina. Not only were objects imported into Greece but pottery and minor arts produced in Greece during the 'Orientalising period' in the seventh century do show influence from this area of the world.

Nevertheless, it is very unlikely that the Near East was the source of inspiration for the Doric order. Its architecture had stone socles and carved orthostates but not walls built entirely of dressed stone. Colonnades existed but not with Doric-like columns. The carved orthostates were probably more influential to Crete where similar examples decorated Archaic temples, for example at Prinias. There are simply no parallels in the Near East for the Doric order. Instead, the character of Near Eastern architecture is one of stylised plant form, more likely an inspiration for the Aeolic and Ionic orders.[321]

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[320]Coulton (1977) 41.
[321]Betancourt (1977) especially 115-133.

The popular theory that large-scale Greek sculpture was influenced by Egypt has led many to believe that its influence extended to monumental architecture.[322] Influence could have been the result from either Greeks visiting Egypt or Egyptians importing their knowledge into Greece. Evidence for contact is demonstrated by the importation of small Egyptian objects that have been found in small numbers within both Geometric and Early Archaic contexts at several sanctuaries. In the Peloponnese, a few Egyptian objects have been found at Argos, the Argive Heraeum, Perachora, and Sparta.[323] Contact with Egypt recorded by ancient historians occurred as early as the second quarter of the seventh century. Herodotus (I.152-4) described how Psammetichos I, *c.* 664 BC, came to power with the help of Ionian and Carian mercenaries and then rewarded them with land.[324] Later in the seventh century, the trading port of Naucratis on the Nile Delta was founded by the Greeks around 620 BC, judging from the earliest pottery found.[325] Pottery from Corinth and Sparta was present among the seventh and sixth century material recovered in excavations of Naucratis.[326] Therefore, there is evidence that some Greeks had access to the monumental buildings of Egypt and thus influence was possible.

The basis for this theory is the similarity of the Doric temple and its construction techniques to examples in Egypt. Monumentality, use of worked stone, and existence of colonnades are all characteristics found in both Greece and Egypt. The Doric columns of Greece are seen as being akin to those on a few Egyptian monuments as they had a similar number of flutes and an upward tapering shaft. The quarrying technique of cutting channels around blocks and then breaking them off with wooden wedges placed in the channels was used in sixth century Greece and Egypt as well as elsewhere. In addition, both the Greeks and Egyptians of the sixth century occasionally left extra stone on their blocks to be worked off in a final dressing, had bosses for lifting or levering, built ramps to hoist blocks to the upper courses, and used swallowtail clamps for securing blocks to one another.[327]

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[322]Boardman (1980) 143; Coulton (1977) 32-33, 39-50.
[323]Boardman (1980) 112-113; Austin (1970) 13.
[324]Herodotus (II.152-4); Diodorus (I.67). Boardman (1980) 114-115.
[325]Boardman (1980) 117-129; Coulton (1977) 32; Austin (1970) 22-33.
[326]Boardman (1980) 121, 124-125.
[327]Coulton (1977) 46, 48-49.

Whether or not Egypt was a source of inspiration for the Doric order, its technology was clearly borrowed in the sixth century. This advancement of technology throughout the sixth century does not predicate that the entire concept of the Doric order must then have come from Egypt, since the seventh century in Greece had already seen great advances in both design and construction techniques.

Despite the semblance between the stone-working technology of the two countries, several other techniques used in Greece during the seventh and early sixth centuries were absent in Egypt. For instance, anathyrosis was only found on Greek blocks and was never used in Egypt.[328] The dressing of blocks and the quarrying of stone had already developed in Greece by the first half of the early seventh century, particularly illustrated in Corinthia. Prior to the sixth century, no clamps were used further demonstrating that stone-working techniques had developed on their own in Greece. Furthermore, the three characteristics cited above as present in architecture of both countries - monumentality, worked stone, and colonnades - were actually already well established in Greek architecture before close contact with Egypt was made.

In order to determine if the prototype of the Doric order was found in Egypt, there must have been examples that are clearly similar from which the Doric order could be borrowed. Although several examples of columns have been cited, all lack several important characteristics of the Doric order. For instance, the closest example seems to be the portico of Anubis at Dair al-Bahri built in the fifteenth century BC which at first glance does resemble a Doric column with its fluted shaft and square abacus.[329] But on closer inspection the two most characteristic features of a Doric column are lacking in the Egyptian example: the existence of an echinus and the absence of a base. Generally, the Doric column had an abacus which was much larger than the shaft whereas in Egypt the abacus barely exceeds the upper diameter of the shaft. If Greek builders borrowed the Doric order from Egypt, then there is no reasonable explanation for the wide variety of column proportions instead of the uniformity one would expect if they had copied the columns from Egyptian prototypes. As for possible Egyptian parallels with the

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[328]Coulton (1977) 47.
[329]Coulton (1977) pl. 4.

Doric architrave, Coulton points out the Egyptian taenia in fact belongs to the cornice and not the architrave.[330] Some of the most characteristic features of the Doric order were not present in Egypt at all, such as the cushion-like echinus, the triglyph-metope frieze, and the mutules beneath the cornice. Furthermore, "the peg-like projections[guttae] on the Doric architrave (and also the cornice) have no precedents in Egypt or Bronze Age Greece, and are probably derived from functional pegs in wooden construction...".[331] The major problem with this theory is that there were actually no Doric-like buildings in Egypt which the Greeks could have copied.

For some scholars, foreign influence has been seen as the only source for features of large scale architecture. As there are no examples of the Doric order in Egypt and many of the Doric characteristics do not exist there, it is very unlikely that the Doric order was the result of influence from Egypt. Monumentality, stone-working technology, peristyles, and terracotta roofing systems were already in place before the stone Doric order appeared and thus not all features of monumental architecture can be seen as a product of foreign influence. There is no reason to believe that imaginative invention in design could not be achieved by the Greeks on their own and needed foreign inspiration. In addition, even if the Greeks were exposed to these foreign monuments, there is no certainty that they would influence their own architecture. Leaving aside Doric, in other respects the Greeks did not generally copy all the other types of columns and buildings of Egypt. In addition, the majority of Greeks associated with the contact with Egypt in ancient literature were from Asia Minor instead of the Mainland. If architectural influence occurred it would more likely be seen in Asia Minor. The so-called similarities are not close enough to show influence, and there is no reason why the Doric order necessarily had to come from elsewhere.

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[330]Coulton (1977) 39.
[331]Coulton (1977) 39.

THE BRONZE AGE THEORY

The excavations over the past century have spawned a theory that the Doric order owes many or some of its elements to the monuments of the Bronze Age.

One theory put forward, which has little support, was that the Minoan triglyph bench-altar was the source for the Doric frieze.[332] While the Minoan benches did have triglyph-like bands flanked by panels, there was no evidence that these benches were visible in the seventh or sixth century. In addition, many of the details of the frieze were lacking on the Minoan benches, such as the taenia and regulae. The relationship of mutules to triglyphs had no Minoan precedence so their existence cannot be explained in terms of the Minoan bench. It is also unlikely that a motif from a bench would have ever been transferred to a high position on a building.

Reverence for the Mycenaean past may have been responsible for the invention of the Doric order.[333] Shrines were set up around Mycenae and other Bronze Age sites throughout the eighth and seventh centuries paying homage to their ancestors. The Bronze Age settlements and tombs became sites of worship.[334] At Prosymna near the Argive Heraion, thirteen Mycenaean tombs had votive offerings beginning in the late eighth century BC.[335] Finds from the Late Geometric period were discovered in all nine tholos tombs at Mycenae as well as two of the chamber tombs.[336] Among the other sites where post-Mycenaean votives were found in Mycenaean tombs, a vast number are in the Peloponnese particularly in the Argolid and Messenia.[337] The monumental terrace of the late eighth or early seventh century at the Argive Heraion seems to have been inspired by the nearby Cyclopean walls at Mycenae, Tiryns, and Prosymna. The worship at heroic sites particularly in the Argolid might have exposed the seventh century builders to some of its decorative architectural features, namely the tradition of wooden antae and Doric-like columns.

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[332]Bowen (1950) 113-125. Influence of the Minoan benches on the Doric frieze was wholly discounted by most including Holland (1917) 124-125;
[333]Boardman (1980) 143; Thompson (1980) 3-15; Coulton (1977) 39-41; Wesenberg (1971) 49-62; Bowen (1950) 119-125; Dinsmoor (1950) 56; Middleton (1886) 163.
[334]Coldstream (1976) 8-17
[335]Blegen (1937) 262-263.
[336]Thompson (1980) 7; Coldstream (1976) 9.
[337]Coldstream (1976) 10.

The columns on the Lion Gate, Tomb of Clytemnestra, and Treasury of Atreus at Mycenae may have been the source of inspiration for the Doric order (*figures 47a-c*).[338] Even representations of columns on minor arts may have contributed to the development of the Doric column. The Mycenaean columns have a square abacus, a cushion echinus, a necking ring of leaves, a downward tapering shaft, and a round base. The Mycenaean capital does have striking resemblance to that of the Doric order. Both types of capitals had a cushion-shaped echinus, so characteristic of the earliest Doric capitals, and a ring of leaves around the neck, which occurred on many of the earliest Doric capitals in the Peloponnese and the half-capitals from the Treasury of Atreus. The abacus was wider than the top of the shaft as in the Doric order. Fluted columns can be seen on votive columns and the Tomb of Clytemnestra (*figure 47c*);[339] although at the tomb the surviving example was engaged and had a low semicircular base. Furthermore, its capital had a ring of leaves beneath the echinus. If viewed outside of its context, this column could be seen as Doric. The façade was visible in the seventh and sixth centuries since votives from the eighth through the fifth centuries were found in the dromos. Although the Mycenaean columns had a downward tapering shaft and a low base, the capitals and fluted shafts were nearly identical to those of the Doric order.

IMPACT OF REGIONAL STYLES ON THE DEBATE

There are basically two lines of thought as to the origins of the Doric order: either it originally existed in wood and was translated into stone or there was a transfer of ideas which led to the inception of the Doric order immediately upon the introduction of stone architecture. With these theories in mind, the archaeological evidence from the Peloponnese may be reconsidered to see if it can shed some light on the origins of the Doric order.

The basic elements of the Doric order should be evident in another culture if importation was a significant influence on its design. The Egyptian and Mycenaean examples offer the best possible sources of inspiration for the Doric order.

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[338]Thompson (1980) 3-15; Wesenberg (1971) concluded that the Doric capital was based on Mycenaean forms because they were more similar than were the Egyptian or Near Eastern forms.
[339]Thompson (1980) 3-15, fig. 4; Wesenberg (1971) figs. 11-12.

The theory advanced that the Doric order was a borrowing from Egypt does have its merits but when set against the archaeological evidence from the Peloponnese, it seems unlikely. It has been argued that monumentality came from the Egyptians, but the Corinthian temples as well as others from the Early Archaic period date to before the period of renewed contact with them. The quarrying technique discussed above may have been borrowed from Egypt but the Greeks were already quarrying stone blocks in the Corinthia a century beforehand. Moreover, peripteral temples existed in Greece from the mid eighth century and in the Peloponnese from the first half of the seventh century. Therefore, some of the aspects that have been attributed to the Egyptians were in place before contact between the two cultures was established and before the first stone Doric temples were erected.

Evidence from the Peloponnese actually supports the timber origin. The best evidence may in fact come from the Heraion at Olympia which lacked only the stone Doric columns and entablature when it was built in the first quarter of the sixth century. The wooden columns of both the peristyle and the interior colonnades were eventually replaced by stone Doric examples, some apparently only a few years after the temple was completed. It is difficult to believe that stone Doric columns were added one by one to a non-Doric temple without the feeling that there was a need to replace all the earlier columns with Doric ones. This suggests that the wooden columns were actually of the Doric order so that the replacement columns would not stand out. Several other pieces of evidence support the belief that the Olympia temple was Doric from the beginning. First of all, when Pausanias mentions the wooden column still in the opisthodomos (V.16.1), he commented only on its age not its style which may suggest that it too was Doric like all the rest. Secondly, rings of pendant bronze leaves may have been nailed to the wooden capitals beneath the echinus which were later imitated by the necking leaves of the stone Doric capitals. Finally, the contraction of the column spacing at all the corners can only indicate that the Heraion at Olympia surely must have had a wooden Doric frieze as there could be no other reason for bringing the triglyph to the corner. The timber origin theory is further strengthened by the fact that in the Peloponnese the wooden columns of peristyles never had additional bases, but they

stood directly on the stylobate as did later stone Doric columns. In contrast, areas where the Ionic order was developed had wooden columns standing on stone bases upon the stylobates, for example at the first and second Hera temples on Samos and the first Artemision at Ephesos from the mid eighth and seventh centuries.

All the elements of the Doric can be explained in terms of an original structural role except for the design of the Doric column, in as much as any design of column would have sufficed as a support. A prototype for its design seems to lie in the monuments of the Greek Bronze Age. It must be more than coincidence that both the Mycenaean and Doric capitals had an echinus, similar profiles, similar proportion of abacus to shaft, and leaves around their necks. The existence of identical fluting on the columns of the Tomb of Clytemnestra as well as other columns or models of columns suggests that they were prototypes for the Doric shaft. Furthermore, access to these columns was clearly documented in the Early Archaic period by the post-Mycenaean material discovered at the monuments.

As the Greeks were already building peripteral wooden temples, the borrowing of the Mycenaean type capital could have happened as early as the late eighth or beginning of the seventh centuries. They, along with the rest of the features of the wooden Doric temples, would then have been translated into stone in the early sixth century at a time of influence from Egyptian construction techniques. The Doric order therefore may have been in origin a combination of the timber and Mycenaean influences, and its translation into stone a result of sixth century infusion of Egyptian technology.

Traditionally, the invention of the Doric order has been attributed to Corinthia and the Argolid where the earliest monumental temples were built. Pindar (*Olympian Odes* XIII, 21-22) suggests that the pediment was invented in Corinth. Vitruvius (IV.1.3) claims the first Doric order temple was erected at the Argive Heraion. Several scholars have believed that the archaeological evidence supports these authors and points to the development of the Doric order in the northeast Peloponnese.[340] There is no doubt that the greatest number of seventh century peripteral temples were located in Corinthia, the Argolid, and Aetolia across the Corinthian Gulf at Thermon. In addition, the earliest stone Doric

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[340]R.M. Cook (1970) 119; id. (1951) 52; Payne (1931) 250 n.3; Weickert (1929) 42-44.

capitals came from the Argolid, Corinthia, and the Corinthian colonies at Syracuse and Corcyra. Doric elements were also used for decorative purposes in areas within Corinthia's control, such as votive Doric capitals and the Doric frieze on altars at Corinth, Perachora, and Corcyra.

Several innovations of the Early Archaic period occurred in the northeast Peloponnese. As the Doric capitals resemble those from Mycenae, the borrowing of the form could have taken place in the Argolid possibly by the builders of the Argive Heraion temple. Pliny (*Natural History* 35.152) records that the technique of moulding terracotta was invented at Corinth by Demaratus of Sicyon. This invention brought about that of the terracotta tiles for roofs and eventually terracotta roof revetment. In the late eighth century, Corinthia was responsible for two other innovations, the quarrying of stone and the dressing of blocks. Within the first half of the seventh century, the first walls were built with ashlar masonry in Corinthia. As these innovations are crucial for all later monumental temples, it would not be surprising if this area was instrumental in the beginnings of the Doric order. If the Doric order originated in the Corinthia then it was in wood as those temples had wooden columns and entablatures.

CONCLUSION

Although other theories about the origin of the Doric order do have their merits, the timber origin best reflects the archaeological evidence. All features of the plans for stone Doric temples were already in existence in the wooden temples of the seventh century. In addition, several features of the seventh and early sixth centuries temples indicate that they were wooden Doric, for instance the angle contraction at the Heraion of Olympia and the rings of pendent bronze leaves for the necks of the wooden columns. When the temples were built of stone, the definitive structural elements of frieze and columns were translated from wood for the first time.

The form of the Doric capital appears to have been influenced by those of the Mycenaean monuments. The existence and shape of the echinus, the proportion of abacus to shaft diameter, the fluted shafts, and the decoration of petals around the

neck are nearly identical in the Bronze Age examples particularly from Mycenae and the earliest versions of the stone Doric capitals.

Finally, since other architectural innovations may be attributed to Corinthia in the late eighth and first half of the seventh centuries, it is probable that this area was also responsible for the invention of the Doric order which may have manifested itself in early form at the temples at Isthmia, Corinth, or the Argive Heraion.

It is concluded therefore, that the Doric order originated in the early seventh century in wood, more or less as envisaged by Vitruvius with the entablature originally being structural and the design of the triglyphs resulting from an ornamentation of the beam ends. During this period, the wooden columns received an ornamental capital which borrowed forms from Mycenae. In the early sixth century, the entire order was translated into stone. The petrification of the colonnade was a natural progression into permanence similar to the moves from thatch to terracotta tiles or mud-brick to worked blocks.

CONCLUSION

There are several aspects of Early Archaic architecture which are particularly important for our understanding of temples and how they developed. The innovations in design, materials, and techniques; the Doric order originally created in wood and its Mycenaean prototypes; and the significance of the northeast Peloponnese responsible for the creation of a new type of roof, ashlar masonry, and possibly the Doric order all played an instrumental role in the evolution of temples. Finally, the recognition of regional styles shows that architecture was a local phenomenon and developed somewhat independently in the seventh and early sixth centuries.

This was a period when innovative designs were experimented with; new, more permanent, construction materials and advanced techniques were used; and monumentality was sought and achieved. Although the majority of temples were fairly small, about a dozen of monumental size were constructed throughout the Mainland in the seventh century. As these larger temples were considerably more expensive to build, since they required quarried stone and stone masons, there were relatively few of them. The desire to build larger, more permanent structures was behind several innovations. One such attempt was the introduction of terracotta tiles because the previous roofing material, thatch, was susceptible to fire and had to be replaced about every generation. The move to fully ashlar walls was another form of permanence since the earlier construction method of rubble and mud-brick was not as durable and everlasting whereas buildings constructed of stone blocks had a greater survival rate as demonstrated by their remains which are considerably better preserved. Finally, technical advances were sought to build structures that were more sturdy. A terracotta roof would have substantially increased the weight of the superstructure requiring the walls to be strengthened by increasing their width, using dressed masonry, or fortifying the foundations. The use of dressed masonry was the method chosen for the larger temples as it provided a more stable base upon which to build the superstructure. A fully stone wall was even more desirable as it eliminated the need for mud-brick which collapsed soon after exposure to the elements.

The wooden peripteral temples of the seventh century were probably mostly of the Doric order. Evidence from the Peloponnese supports the traditional arguments for a timber origin manifesting itself in the angle contraction and bronze pendant leaves at the Heraion of Olympia; terracotta Doric elements from the late seventh and early sixth centuries; representations of Doric columns and capitals on pots before capitals were produced in stone around 600 BC; and the fact that all other innovations in plan, scale, and decoration already existed in seventh century wooden peripteral temples. The order was virtually complete on its first known stone examples and it then spread very rapidly to other Greek sanctuaries with little variation in its form suggesting that it had already been established, though in another material. The first stone Doric temples were petrifications of earlier wooden ones, with some adjustment in column spacing and entablature sizes for the different tensile properties of stone compared with wood. The discrepancy of time between the first use of quarried and dressed ashlar blocks during the second quarter of the seventh century in Corinthia and its widespread use in the early sixth century could indicate that close contact with Egypt at that time was responsible for the petrification of the Doric order.

Traditionally, the Doric order has been attributed to the northeast Peloponnese where the earliest monumental temples were built. This is supported by the fact that the earliest stone Doric capitals were from the Argolid, Corinthia, the Corinthian colonies at Syracuse and Corcyra, and the nearby island of Aegina.

More specifically, the beginnings of the Doric order may have been in Corinthia which was responsible for several other developments in the Early Archaic period, including the technique of moulding terracotta, the invention of the terracotta roof tile used on the temples at Corinth and Isthmia in the first half of the seventh century, and the introduction of the pediment. Another three significant innovations from this area were the quarrying of stone, the dressing of ashlar blocks, and the erection of the first fully stone wall. Despite this last advancement in the first half of the seventh century, it was not adopted immediately but took almost a century before the next fully stone walled temple was built. As these innovations were crucial for all later monumental temples, it would not be surprising if this area was instrumental in the beginnings of the Doric order,

rendered first in timber. The use of Doric elements for decorative purposes in areas within Corinth's control suggests that it had been a part of the architectural style for some time.

Alternatively, the Doric order may have originated in the Argolid. Vitruvius (IV.1.3) stated that the first Doric temple was erected at the Argive Heraion which may have been true as some of the earliest stone capitals were discovered there. Even though the capitals may have served the late seventh century stoa, they could have been stone counterparts to the wooden capitals on the temple. Furthermore, the adoption of the Mycenaean shaft and capital forms could have been executed at the Argive Heraion as the prototypes at Mycenae were only five km away and had been known since at least the late eighth century as attested by the Late Geometric offerings at the various monuments. Therefore, the archaeological evidence as well as the literary supports the theory that the Doric order was created in the northeast Peloponnese, originally in wood, and from the forms of Mycenaean columns.

The recognition of the existence of regional styles shows that early architecture was conducted primarily on a local level. Individual communities were responsible in the end for virtually every building project within their territories even in the later periods when the style of architecture employed was more or less consistent throughout the Mainland. However, during this period when temple architecture was in its infancy and so many innovations occurred, local influences played a greater role than they probably did in the following periods. As no formula had really been set for the plan and style of temples at this early date, those features which were invented, experimented with, and even established within each region were particularly important in the development of temple architecture as a whole into a more standardised form in the late sixth century. The existence of regional styles also indicates that workshops of architects and builders were not travelling the countryside; the designers and labourers were locals. The existence of separate styles in the Peloponnese must surely mean that they were present for the remainder of the Mainland.

Sanctuaries with political ties to a city outside of the area seem to adopt that city's architectural style so as to identify with it and its political association. For

example, the temples at Tyros in Kynouria and Prasidaki near the borders of Messenia, Eleia, and Arcadia both had roofs which were Laconian in style reflecting the influence or control that Sparta had over the sites. The use of Argive style antefixes at sites in Eleia in the seventh century also shows the influence of Argos over the area. Regional styles were quite apparent at sanctuaries with international treasuries as each used their city's characteristic features and decoration. It is then probable that the ancients recognised decorative details and exploited them as characteristic emblems of a city or region.

GAZETTEER FOR CORINTHIA

ACROCORINTH, *EARLY ARCHAIC TEMPLE OF APHRODITE*

Blegen (1930) 3-4, pl. 1.

Scanty remains of walls from an early temple stood upon the summit.

Remains: rubble foundations; three-peaked antefix.

Date: late seventh or early sixth century based on the associated pottery and style of the antefix.

CORINTH, *PROTOCORINTHIAN TEMPLE OF APOLLO (figures 3a and 43c, plate 1)*.

Rhodes (1987a) 477-480; Rhodes (1987b) 545-551; Rhodes (1984) 97-102; Robinson (1984) 55-66, figs. 1-6, pls. 14-15; id. (1976a) 203-235; id. (1976b) 239-250, figs. 6-10; id. (1971) 96-100; M. Roebuck (1990) 47-63, pl. 5; M. Roebuck (1955) 147-157; Weinberg (1939) 595; Williams (1984) 67-75, fig. 1; Williams (1980) 345-350.

The Protocorinthian temple of Apollo appears to have been located on Temple Hill where its successor now stands. Burnt blocks and roof tiles from the temple were found along the Archaic roadway to the north. Its plan cannot be ascertained since the construction of the Late Archaic temple obliterated almost every trace of it except for a few possible cuttings in the bedrock. The walls were probably built entirely of ashlar blocks, covered with white plaster, decorated with coloured designs, and carved with an inscription. The roof tiles are the earliest known terracotta roof tiles from the post-Mycenaean period. The curved pans and covers are combined into one tile. Hip tiles show that at least one end of the building did not have a pedimental façade.

Remains: ashlar limestone wall blocks with parallel lifting grooves, plaster, and iron dowels; wall blocks with cuttings for timbers; wall blocks with a religious inscription and markings for a wooden frame around a window or door; possibly a few geison blocks; plaster chips with coloured paint; terracotta roof tiles including combination pan and cover tiles, single cover tiles, combination eaves tiles, combination ridge tiles, and combination hip tiles; possibly mud-brick; possibly cuttings in the bedrock within the Late Archaic temple.

Date: first half of the seventh century BC based on pottery found in working chip fill.

CORINTH, *ARCHAIC TEMPLE OF APOLLO AT THE ASKLEPIEION*

F.J. De Waele (1933) 420-423 and 449, fig. 1, pls. 48-49; C. Roebuck (1951) 9-15 and 152, fig. 3, pl. 2.

Within the cuttings in the rock for the Hellenistic temple for Asklepios are more cuttings for an earlier structure dedicated to Apollo. The Apollo temple measured *c.* 5.00 x 7.48 m and consisted of a cella with cuttings for temple furniture. The large entrance way and cuttings for four posts in the interior suggest that this shrine was unroofed with a baldachino to shelter the cult statue.

Remains: cuttings in the rock for cella walls with antae; additional cuttings in the interior for a four post structure, a statue base, an altar, a table in front of the altar, and a drain channel leading from the altar to a settling basin outside of the temple.

Date: sixth century BC based on votives found in vicinity.

ISTHMIA, *PROTOCORINTHIAN TEMPLE OF POSEIDON (figures 3b and 5-11, plates 2-3).*

Broneer (1976) 41-46, figs. 3-4; id. (1971) 3-56, figs. 1-52, pls. A-C, 3-4, 10-13; id. (1966) 64-65; id. (1962) 21-22; id. (1961) 250-258; id. (1959) 300-303, 339; id. (1958) 2-3, 28; id. (1955a) 111-141, pls. 42a, 43a, 50c; id. (1955b) 56-59; id. (1953) 188; H.W. Catling (1987-8) 21-22; Coulton (1975) 271-272; Gebhard and Hemans (1992) 23-40, figs. 5-10; Hemans (1991) 301-302; Hemans (1989) 251-266, figs. 1-3; Koenigs (1975) 402-406; Rhodes (1984) 43-98, figs. 23-24; Robinson (1984) 55-66; Rostoker and Gebhard (1981) 211-227; Roux (1974) 305-306; Sturgeon (1987) 53, pl. 1; Williams (1980) 345-350.

The temple of Poseidon was built slightly later than that at Corinth, but its remains are better preserved within those of the Classical temple. The temple measured *c.* 14.10-.40 x 39.25 m and was peripteral with approximately 7 x 18 columns. The stylobate had one step encircling the cella with an additional step along the eastern side. The cella, *c.* 7.90 x 32.28 m, and the pronaos had a central row of columns. Wooden buttresses lined the exterior walls at intervals of 2.26 m probably framing panels of painted stucco. The walls were built entirely of ashlar blocks. As at Corinth, the roof had combination tiles and a hipped end.

Remains: foundation and stylobate trenches; stylobate blocks with circular traces for columns; one step along east side; three packed earth floor levels; five rows of circular cuttings; cella wall trenches; trenches for exterior wall piers; cut limestone wall blocks with lifting grooves, painted stucco, and sometimes anathyrosis; wall blocks with cuttings for timber; geison blocks; combination roof tiles including regular, ridge, hip, and eaves tiles.

Date: second quarter of the seventh century BC based on associated pottery and style of perirrhanterion.

GAZETTEER FOR THE ARGOLID

ARGIVE HERAION, *EARLY ARCHAIC TEMPLE OF HERA (figures 15a and 16a, plates 4-7).*

Amandry (1952) 222-274, figs. 1, 3-4; Antonaccio (1992) 85-105, figs. 2, pl. 23; Blegen (1939) 410-444; Blegen (1937) 19-20; Brownson (1893) 213-214; Caskey and Amandry (1952) 165-221, 230-233, figs. 3-4; Pfaff (1990) 149-156, figs. 2-4, pl. 12; Plommer (1984) 183-184; Plommer (1977) 75-88; Tilton (1902) 109-111; Tomlinson (1972) 230-236; Wright (1982) 186-201; Wright (1980) 241-242.

The Early Archaic temple of Hera stood upon an earlier terrace built of Cyclopean masonry and flagstone paving. Little of the temple survived beyond the peristyle's stylobate so the plan is basically unknown. The floor appears to have been of packed earth. It probably faced west since the remains of the cult statue base lie towards the eastern end. A stone stylobate of polygonal masonry had cuttings for columns; a stone drum now stands on the stylobate. Stone capitals were found at the sanctuary which probably instead belonged to a stoa on a lower terrace.

Remains: earlier temple terrace and flagstone paving; stylobate blocks with traces of columns; column drum; possibly stone Doric capitals; three-peaked antefixes; stone cult statue base.

Date: second half of seventh century BC.

ASINE, *EARLY ARCHAIC TEMPLE OF APOLLO PYTHAIOS (figure 15d).*

Barrett (1954) 428-429, 438-439; Frödin and Persson (1938) 149-151, fig. 130; Wells (1990) 157-161, figs. 1-2, pl. 13.

The temple measured *c.* 4.3 x 9.6 m and had two rooms, the rear of which had a ledge or bench along the walls. The rubble socle was probably topped with mud-brick. In the Late Archaic period, it was reroofed by a painted terracotta sima antefix.

Remains: wall socles; ledge around rear room; paving stones; threshold stone; terracotta roof tiles; Late Archaic terracotta sima fragments.

Date: seventh century BC based on associated pottery.

EPIDAUROS, *ARCHAIC REMAINS* (*figure 16e*).

Billot (1990) 107-109, fig. 4, pl. 11a; Kolokotsas (1990) fig. 1.

A pentagonal antefix from the mid sixth century was recovered indicating that a structure existed.

Remains: pentagonal antefix.

Date: mid sixth century BC based on the style of the antefix.

HALIEIS, *EARLY ARCHAIC TEMPLE OF APOLLO* (*figures 15b and 16a*).

Bergquist (1990a) 225-228, figs. 2-3; Bergquist (1990b) 23-37; Boyd and Rudolf (1978) 333-355; Caskey (1971) 301-302; N.K. Cooper (1990) 65-77, figs. 2-10; N.K. Cooper (1989) 33-47, figs. 10-14, pls. 9-10; Jameson (1982) 363-367; id. (1974) 111-119; id. (1973-4) 261-264; id. (1973) 219-229; id. (1972) 233-236; id. (1971) 114-119; id. (1969) 311-342; Michaud (1972) 651-652; Michaud (1971) 875-878.

Lying beneath the water, the three-roomed temple plus pronaos measured *c.* 4.46 x 27.00 m and was oriented to the south. The southernmost room and pronaos constituted the temple proper. The two northernmost rooms served the temple as dining facilities after the sacrifices. Semicircular stone bases lined the exterior of the rubble walls for piers.

Remains: cella and cross walls; interior engaged colonnade; paving slabs; side doors for two northernmost rooms; statue base; painted stucco; terracotta Cointhian roof tiles including pans, covers, ridge, and eaves tiles; three-peaked antefixes.

Date: early seventh century BC based on style of votives and pottery; terracotta roof added in late seventh or early sixth century BC based on the style of antefixes.

MASES, *EARLY ARCHAIC REMAINS* (*figure 16a*).

Dengate (1974) 123; N.K. Cooper (1990) fig. 9.

Remains: undecorated three-peaked antefixes.

Date: mid to late seventh century BC based on style of antefixes.

MYCENAE, *ARCHAIC TEMPLE OF HERA OR ATHENA*

Boethius (1921-3) 414-416; Bookidis (1967) 166-173; Harl-Schaller (1972-3) 94-116; Kourouniotes (1901) 18-22; Lemerle (1939) 296; Mylonas (1966) 72; Mylonas (1957) 42, 63, fig. 14, pl. 7; Nilsson (1950) 473-479; Tsountas (1886) 59-61, pl. 4; Wace (1949) 84-86, pl. 107; Wace (1939) 210-212; Wace (1921-23) 245; Wright(1982)194.

On top of the Mycenaean palace stood at least one temple originally constructed in the Archaic period and later replaced in the Hellenistic period. The Late Archaic stone temple may have had a predecessor built on the seventh century terrace. Daedalic stone reliefs may have been metopes for either temple or, more likely, plaques decorating the altar.

Remains: terrace; stone blocks; cornice blocks; terracotta roof tiles; relief plaques.

Date: possible Early Archaic temple built after construction of seventh century terrace; worked stone temple built in the late sixth century BC.

NEMEA, *EARLY ARCHAIC TEMPLE OF ZEUS (figures 16b-c, plates 10-15).*

Birge, Kraynak, and Miller (1992) 23-24, 63-64, 74, fig. 72; Blegen (1927) 421-427; Stella Miller (1984) 171-192; Stella Miller (1983) 73-74; Stephen G. Miller (1982) 100-108; id. (1981) 45-67, fig. 4, pl. 15; id. (1980) 178-205, figs. 2-3, pls. 38-49; id. (1979) 73-103; id. (1978) 58, 63-64; id. (1977a) 21; id. (1977b) 57-58; id. (1976a) 183; id. (1976b) 68-69, fig. 15; id. (1975) 158-160; id. (1973-4) 256-259; id. (1990) 58-62, 130-132, 141, figs. 17-18, pl. 38d; Williams (1965) 154-156.

Beneath the stylobate of the Classical temple of Zeus lie blocks that did not belong to that structure; they instead probably belonged to an earlier temple which seems to have stood on the same site. The existence of an earlier wall in the Classical adyton helps to establish the temple's approximate size and orientation. At least part of the walls were built of ashlar blocks and decorated with coloured plaster. The roof was hipped on at least one end and decorated with three-peaked antefixes. The roof had a remodelling phase as shown by the later ridge acroteria similar to those that adorned the Late Archaic temple of Apollo at Corinth.

Remains: blocks within the Classical temple's foundations; south wall in the Classical adyton; limestone blocks with ice-tong lifting holes, anathyrosis, painted stucco, dowel holes, and swallow tail clamps; wall blocks with cuttings for timbers; bronze nails and sheathing with holes; possibly a painted stone geison block; Corinthian roof tiles with stamps including pans, covers, ridges, hips, and eaves; anefixes of the tri-peaked form; Late Archaic palmette ridge acroteria.

Date: first half of the sixth century BC based on style of antefixes and type of lifting holes; roof renovated in Late Archaic period.

TIRYNS, *EARLY ARCHAIC TEMPLE OF HERA OR ATHENA (figures 15c and 40d, plate 9).*

Blegen (1921) 130-3; Frickenhaus, Müller, and Oelmann (1912) 2-13; Hübner (1978) 117-36, figs. 1-2, pl. 64; Jantzen (1975) 96-107, 126-131, figs. 24, 37-38; Robert (1920) 373-87; Schliemann (1886) 229, 271, 293-295; Sulze (1936) 14-36, figs. 1-3; Touchais (1984) 759; Wright (1982) 186-201, fig. 2.

Placed upon the Mycenaean megaron, the temple incorporates elements of the earlier structure. Oriented to the south, it had a pronaos and a cella each with a modern central column standing on the Mycenaean bases.

Remains: reused Mycenaean walls; Archaic rubble walls; reused Mycenaean column bases; poros Doric capital; terracotta roof tiles; pentagonal antefix.

Date: late seventh century BC based on style of antefix and Doric capital.

TROIZEN, *ARCHAIC TEMPLE REMAINS (figures 16e and 40e).*

Frickenhaus and Müller (1911) 21-38; Legrand (1905) 269-315, figs. 3-6; Welter (1941) 19-20, pls. 8 and 27.

A middle to late sixth century temple was built on a terrace overlooking the city.

Remains: foundations; Archaic Doric capital; pentagonal antefix; raking sima with lion's head spout.

Date: second half of the sixth century B.C.

GAZETTEER FOR ARCADIA

ALIPHEIRA, *EARLY ARCHAIC REMAINS* (*figure 23a, plate 16*).

Orlandos (1968) 13, 78, fig. 52.

In addition to the Late Archaic temple of Athena, earlier terracotta architectural fragments must have belonged to a earlier structure.

Remains: terracotta sima fragment; terracotta semicircular antefixes with gorgoneia; terracotta Laconian roof tiles.

Date: early sixth century BC based on style of antefixes.

BASSAE, *EARLY ARCHAIC TEMPLE OF APOLLO EPIKOURIOS* (*figures 20b, 23b, and 25a-b, plate 17*).

F.A. Cooper (1994); F.A. Cooper (1978) 70-71, 196-201; N.K. Cooper (1990) 65-93; N.K. Cooper (1989) 100-111; N.K. Cooper (1980) 202; Kourouniotes (1910) 271-332, figs. 4-5; Parlama (1971) 142-146, fig. 2; Rhomaios (1933) 1-25, figs. 1-3, 6-7, pls. 1,3; Yalouris (1979) 89-104; id. (1973) 39-55, figs. 14-16; id. (1960) 106-109; id. (1965) 155-159, pl. 134c.

The remains of a temple measuring *c.* 7.5 x 24 m lies to the south of the extant Classical temple. It contained a cella, an adyton, a pronaos, and possibly an opisthodomos. Its roof had elaborately decorated antefixes and disc acroteria.

Remains: rubble foundations and walls; terracotta Laconian roof tiles; terracotta antefixes; terracotta disc acroteria.

Date: late seventh or early sixth century BC based on style of roof revetment.

BOREION, *EARLY ARCHAIC REMAINS FROM THE SANCTUARY OF ATHENA SOTEIRA AND POSEIDON* (*figures 23e-f, 24, and 25c, plate 18*).

Daux (1959) 625-628; Rhomaios (1957) 114-163, figs.3-14; Rhomaios (1910) 274-276.

Underneath the Late Archaic temple was a small temple said to have been made of wood and mud-brick. It was probably oriented to the north so as to face the altar. It was decorated with Laconian-style antefixes and may have had several different roofs.

Remains: terracotta disc acroteria; Laconian-style terracotta semicircular antefix; small terracotta palmettes; a terracotta sima fragment; Laconian-shaped roof tiles.
Date: late seventh or early sixth century BC based on style of revetment.

GORTSOULI, *EARLY ARCHAIC TEMPLE(S)* (*figures 20d and 21, plate 19*).

Karageorga (1963) 88-89, fig. 1.

A temple on the top of the hill faced south and measured *c.* 6.5 x 16.5 m. Within these foundations are additional walls either for an earlier smaller structure whose width was 4.90 m or for benches lining the interior of the temple. Paving is located just inside the entrance to the temple in front of the interior foundations.

Remains: Rubble foundations and walls; additional foundations; paving; terracotta Laconian roof tiles.

Date: late seventh century BC based on associated finds.

KOTILON, *EARLY ARCHAIC TEMPLE 'A'* (*figures 20e and 23c, plate 20*).

F.A. Cooper (1978) 70-71, 196-201; Deubner (1904) 474; Kourouniotes (1903) 151-188, figs. 3-4, pl. 11; Paton (1904) 358.

The foundations measured *c.* 6.8 x 15.6 m and were oriented to the south. The plan was of a pronaos and a cella with a cult statue base.

Remains: rubble foundations and walls; stone cult statue base; terracotta Laconian roof tiles; terracotta semicircular antefix with heraldic sphinxes.

Date: early sixth century BC based on style of votives and antefix.

KOTILON, *EARLY ARCHAIC TEMPLE 'B'* (*plate 20c*).

F.A. Cooper (1978) 70-71, 196-201; Deubner (1904) 474; Kourouniotes (1903) 151-188, fig. 2, pl. 11; Paton (1904) 358.

The east facing temple measured *c.* 5.74 x 9.25 m and had a pronaos and cella.

Remains: rubble foundations and walls; stone cult statue base.

Date: early sixth century BC based on style of associated votives.

LOUSOI, *EARLY ARCHAIC REMAINS AT THE SANCTUARY OF ARTEMIS HIMERA (figures 23d and 25d).*

H.W. Catling (1987-8) 24, fig. 19; Mitsopoulos-Leon (1993) 37; Mitsopoulos-Leon (1990) 163-166, fig. 1, pl. 14; Mitsopoulos-Leon and Glaser (1988) 14-18, fig. 5; Reichel and Wilhelm (1901) 8-15, 61-62, fig. 128.

Under the Hellenistic temple, an earlier temple probably existed as suggested by the need for a temple to house the cult statue and architectural fragments that survive.

Remains: cult statue fragments; terracotta disc acroteria; terracotta palmettes; terracotta semicircular antefixes; terracotta cornice; terracotta sima.

Date: late seventh century BC based on style of roof revetment.

MANTINEA, *EARLY ARCHAIC REMAINS (figure 41e).*

Fougères (1898) fig. 105.

A Doric capital found near the city of Mantinea may have belonged to the temple of Poseidon Hippios.

Remains: Early Archaic Doric capital

Date: first half of the sixth century BC based on the style of the capital.

ORCHOMENOS, *EARLY ARCHAIC REMAINS*

Blum and Plassart (1914) 81-88; Hiller von Gaertringen and Lattermann (1911) 26-29, pls. 1-2; Karo (1914) 160-161; Plassart (1915), 53-127.

In the area of the Late Archaic Hekatompedon, fragments of an Early Archaic disc acroterion were found. No traces of an early building to which this acroterion would have adorned has been found.

Remains: terracotta disc acroterion fragments.

Date: late seventh century BC based on style of acroterion.

PALEOPYRGOS, *EARLY ARCHAIC REMAINS (figures 20i and 23g).*

Foundations of an Archaic building may have been a temple. Its plan was of a small cella and possibly a pronaos. In addition, two types of antefixes were found: small incised palmettes and a semicircular disc with black and purple lunulae.

Remains: foundations of rubble walls; small palmettes; semicircular antefix with lunulae.

Date: late seventh century BC based on style of revetment.

PALLANTION, *EARLY ARCHAIC TEMPLE 'B' (figures 20g).*

Amandry (1940-1) 241-242; H.W. Catling (1984-5) 22-23; Divita (1984) 254; Libertini (1939-40) 225-230; Østby (1991) 41-54, figs. 1-3; Rhomaios (1958) 165-166.

The small temple, measured *c.* 4.20 x 10.00 m, faced east and had a cella and an adyton with a bench or shelf.

Remains: rubble walls and foundations; bench or shelf in adyton.

Date: seventh century BC.

PALLANTION, *EARLY ARCHAIC TEMPLE 'C' (figure 20f, plate 21).*

Amandry (1940-1) 241-242; H.W. Catling (1984-5) 22-23; Divita (1984) 254; Libertini (1939-40) 225-230; Østby (1991) 41-54, figs. 1, 4; Rhomaios (1958) 165-166.

The largest temple at the site measuring *c.* 11.65 x 25.75 m faced east and had a cella with two column bases and cult statue base. The temple was renovated in the Late Archaic period when the stylobate for a peristyle was added, although the columns appear not to ever have been erected.

Remains: rubble walls and foundations; three floor levels; cult statue base; two column bases in cella; terracotta Laconian roof tiles; later stylobate of polygonal masonry.

Date: built in first half of sixth century BC based on associated pottery; renovated *c.* 500 BC.

PETROVOUNI, *EARLY ARCHAIC TEMPLE OF POSEIDON HIPPIOS (figures 20h and 25e).*

Fougeres (1898) 102-107; Hiller von Gaertringen and Lattermann (1911) 24-32, figs. 7-11, pls. 4, 9-10; Rhomaios (1957) 119.

An earlier structure may lie beneath the Hellenistic temple as attested by architectural fragments from the Early Archaic period.

Remains: terracotta disc acroterion; terracotta cornice fragments; stone Doric capital.

Date: late seventh or early sixth century BC based on style of revetment and capital.

TEGEA, *EARLY ARCHAIC TEMPLE OF ATHENA ALEA (figures 20a and 22, plates 22-24).*

Dugas (1921) 335-435; Dörpfeld (1883) 284; Mendel (1901) 256-257; Østby, Luce, Nordquist, Tarditi, and Voyatzis (1994) 94-99, 103, 111-117, 132-133, 139, figs. 2-5, 42; Østby (1986) 75-102, figs. 23-25, 29; Østby (1984) 118-124; Voyatzis (1990) 46-47.

Beneath the fourth century temple are remains of an Early Archaic temple whose material was reused in the Skopas temple. The cella building was *c.* 10.50 x 38.20 m and contained a pronaos, cella, and adyton. Two parallel rows of wooden columns lined the cella. The walls appear to have been constructed of an exterior orthostate with several courses of blocks on the interior. The walls may only have had stone for the socle; the remainder of the walls being of mud-brick. Thin wooden buttresses lined at least the rear exterior wall. The interior floor may have had marble paving.

Remains: reused marble blocks; rubble and worked foundations; marble stylobate blocks with cuttings for columns; marble toichobate blocks; marble paving slabs; roof tiles.

Date: late seventh century BC based on votive deposits.

TZEMBEROU, *EARLY ARCHAIC REMAINS*

Pikoulas (1988) 106-107, fig. 7, pl. 58.

A disc acroterion of Laconian type was found in a plain near Asea.

Remains: disc acroterion fragments.

Date: late seventh or early sixth century BC based on style of acroterion.

GAZETTEER FOR LACONIA

AMYKLAI, *LATE ARCHAIC THRONE AND ALTAR OF APOLLO* (*figure 42a*).

Buschor and von Massow (1927) 1-85; Calligas (1992) 31-48; Chrisanthos (1956) 211-212; id.(1960) 228-331; id. (1961) 177-178; Faustoferri (1993) 159-166; Fiechter (1918) 107-245; Martin (1976) 205-218; Pipili (1987) 82.

The throne or altar of Apollo was a unique structure combining Ionic and Doric architectural styles since it was built by an Ionian, Bathykles from Magnesia. Pausanias recorded that it was lavishly decorated with relief sculpture. The monument had a colossal statue of Apollo surrounded by an altar upon the tomb of Hyakinthos.

Remains: stone blocks; engaged Doric column; Doric capitals; three combination Doric and Ionic capitals; floral Ionic friezes; Ionic architrave; possible terracotta semicircular antefixes; possibly a terracotta sima.

Date: second half of the sixth century BC based on style of the Doric and Ionic elements and the estimated date of Bathykles' life.

AMYKLAI, *EARLY ARCHAIC REMAINS FROM THE SANCTUARY OF ALEXANDRA-KASSANDRA AND ZEUS-AGAMEMNON* (*figure 30b*).

Buschor and von Massow (1927) 44, figs. 22-23, pl.10; Christou (1956) 211-212; id. (1960) 228-231, fig. 171a; id. (1961) 177-178; Mallwitz (1968) 133-140, pl. 48; Orlandos (1962) 133; Orlandos (1961) 172-174; Orlandos (1960) 170, fig. 184.

Although no trace of the building survives, roof revetment found in the area, which do not seem to be related to the nearby Amyklaion, may have belonged to a temple in this lower sanctuary.

Remains: terracotta semicircular antefixes; terracotta disc acroterion.

Date: late seventh or early sixth century BC based on style of revetment and associated ginds in the sanctuary.

KOKKINIA, *ARCHAIC TEMPLE*.

H.W. Catling (1988-9) 31; J. de la Genière (1993) 153-158; id. (1991) 257-265; id. (1986) 29-46; Wace and Hasluck (1907-8) 162.

Doric capitals built into a church belonged to a temple from the mid or late sixth century.

Remains: Archaic Doric capitals.
Date: mid to late sixth century based on the style of the capitals.

KYNOURIA, *EARLY ARCHAIC TEMPLE OF APOLLO TYRITAS AT TYROS* (*figures 29b and 30 d-e*).

Kalloutsi (1930) figs. 3-4; Phaklaris (1990) fig. 100, pl. 75; Rhomaios (1953) 253-254, figs. 2-6; Rhomaios (1911) fig. 3.

Architectural terracottas indicate that a temple stood on the site which was replaced by a Late Archaic or Early Classical temple.

Remains: terracotta disc acroteria; terracotta semicircular antefixes with lunulae.

Date: late seventh or early sixth century based on the style of the roof revetment.

MEGALOPOLIS ROAD SHRINE, *EARLY ARCHAIC SHRINE* (*figure 28a*).

North of Sparta are the remains of walls which were probably from a temple. The building was covered with black washed Laconian roof tiles.

Remains: lower portions of two walls; roof tiles; possibly a Doric column.

Date: mid to late seventh century BC based on associated pottery.

MENELAION, *EARLY ARCHAIC SHRINE OF MENELAOS AND HELEN* (*figures 28b and 29g, plate 25*).

H.W. Catling (1983) 23-30; id. (1982) 28-41; id. (1977) 408-415, fig. 7; id. (1976-7) 36-37, figs. 22-24; id. (1976) 77-90; id. (1975) 258-268; R. Catling (1986) 205-216; Dawkins (1929) figs. 89, 95; Tomlinson (1992) 247-255; Wace, Thompson, and Droop (1908-9) 108-157.

The Menelaion may not have been a proper temple but may have been designed as one and served essentially the same purpose. The plan of the building is unknown but seems to have followed that of the Late Archaic or Early Classical successor of a large podium topped by a small cella structure.

Remains: possible foundations; blocks; terracotta Laconian roof tiles; semicircular antefixes; disc acroteria fragments.

Date: late seventh or early sixth century BC based on the style of the revetment and a possible deposit; rebuilt in the late sixth or early fifth century BC.

PHOINIKI, *EARLY ARCHAIC REMAINS FROM THE SANCTUARY OF APOLLO HYPERTELEATAS* (*figure 29c*).

Calligas (1980) 10-30; H.W. Catling (1981-2) 24; id. (1970-1) 14; Dawkins (1929) fig. 91; Delivorrias (1969) 138-141, figs. 3-5; id. (1968) 153; Hondius and Jondius-van Haeften (1919-21) 147; Wace and Hasluck (1907-8) 165; Wikander (1990) 287.

Although a temple was built in the second half of the sixth century, an earlier antefix indicates that an Early Archaic temple existed.

Remains: semicircular antefix with lunulae; stone Doric capital and triglyph.

Date: late seventh or early sixth century BC based on style of antefix.

SPARTA, *FIRST ARTEMIS ORTHIA TEMPLE* (*figures 28d, 29e, and 30g*).

Boardman (1963) 1-7; Dawkins (1929) 5-16, 117-143, figs. 5-8, 25-26, 90, 92, 99, 101; id. (1909-10) 25-27, fig. 5; id. (1908-9) 5-22; id. (1907-8) 12-22; id. (1905-6) 321-322.

This early temple lies beneath the later Archaic temple consisting of a narrow cella with interior wall piers, a central row of columns, and a dias for the cult statue at the rear of the temple. The original thatch roof was replaced in the seventh century with terracotta tiles and painted antefixes.

Remains: lower courses of south and west walls made of rubble; row of slabs set on edge; mud-brick; trace of a cross wall; stone sockets for beams; central line of stones; Laconian roof tiles; semicircular antefixes.

Date: temple from late eighth or early seventh century BC based on pottery found beneath the floor; terracotta roof added in the seventh century BC.

SPARTA, *SECOND ARTEMIS ORTHIA TEMPLE (figures 28c, 29f, 30a, 30c, and 42b, plate 26).*

Boardman (1963) 1-7; Bosanquet (1905-6) 310; Dawkins (1929) 19-22, 34, figs. 5-6, 8-11, 19, 87, 99-100, 104-105, pls. 5, 22-23, 25-26, 69, 72-74; id. (1909-10) 32-36, 39; id. (1908-9) 5-22; id.(1907-8) 6-7, fig. 1; id. (1906-7) 55-62.

The east-facing temple, measuring *c.* 7.60 x 17.00 m, had two columns in antis or distyle. The temple may have had a pediment with stone sculpture. The roof was topped with a terracotta roof decorated with moulded and painted antefixes and acroteria.

Remains: foundations; a cross wall between the pronaos and the cella; circular holes along exterior walls; possibly a stone capital and drum; stone fragment of a lion's mane; terracotta Laconian roof tiles including pans, covers, ridges, and eaves; possibly a sima fragment; terracotta semicircular antefixes; terracotta disk acroteria fragments.

Date: first half of the sixth century BC based on pottery found in the sand layer.

SPARTA, *POSSIBLE EARLY ARCHAIC REMAINS FROM THE LATE ARCHAIC TEMPLE OF ATHENA CHALKIOIKOS (figure 28e, plate 27).*

Dickins (1907-8) 142-146; Dickins (1906-7) 137-154, figs. 1-2; Palagia (1993) 167-175; Pipili (1987) 80; Stibbe (1989) 93-96; Woodward (1926-7) 37-45, pl. 5.

The temple's bronze decorated walls and its bronze cult statue was attributed to Gitiadas who worked in the last quarter of the sixth century by Pausanias. An earlier smaller structure possibly existed whose remains may have been either destroyed before or by the Gitiadas temple or incorporated into the new temple. The mud-brick inner walls may have originally been from this earlier temple and then reused in the Gitiadas temple.

Remains: remains of south, east, and west walls of rubble possibly from the stylobate; traces of inner mud-brick wall; possibly two Doric capitals; Laconian terracotta tiles with a black glaze; terracotta antefix fragments; terracotta sima fragment; bronze plates and nails.

Date: present temple from late sixth century BC; possible earlier temple from seventh or early sixth century BC.

SPARTA, *EARLY ARCHAIC TEMPLE OF ATHENA ERGANE ON THE ACROPOLIS (figures 28f and 30f).*

Palagia (1993) 167-175; Pipili (1987) 80; Stibbe (1989) 94, fig. 30; Woodward (1928-9; 1929-30) 160; id. (1927-8) 75; id. (1926-7) 37-48, figs. 1-2, pl. 5; id. (1923-4; 1924-5) 240-252.

A few metres south of the Athena Chalkioikos temenos is another temple for Athena. It is a small cella building, *c.* 4.90 x 9.40 m, decorated with Laconian tiles and a disc acroterion.

Remains: north wall of rubble; portion of the west and east walls of rubble; traces of mud-brick; Laconian terracotta roof tiles with a black glaze; disc acroterion fragments.

Date: early sixth century BC based on associated pottery and style or acroterion.

TSAKONA, *EARLY ARCHAIC TEMPLE OF ZEUS MESSAPEUS (figures 28g and 29d).*

H.W. Catling (1990a) 15-35, fig. 4, pls. 3-4, 6; id. (1990b) 276-295, figs. 3-5.

The temple of Zeus is a long structure measuring 5 x 11 m with an entrance at the eastern end and a cult statue to the west.

Remains: lower courses of walls; interior pits; iron nails; terracotta Laconian roof tiles including pans, covers, and ridge tiles; disc acroterion fragments; semicircular antefixes.

Date: seventh century BC based on associated pottery and style of revetment.

GAZETTEER FOR MESSENIA

AKOVITIKA, *EARLY ARCHAIC BUILDING FROM THE SANCTUARY OF POSEIDON*

Themelis (1969) 352-357, figs. 1-6.

A building located in the sanctuary of Poseidon measured *c.* 8 x 33 m. It had a Doric inner peristyle and a colonnade on at least the north side. It could have been either a temple or a stoa.

Remains: rubble foundations of long narrow building; inner peristyle; bases for columns along the north exterior; terracotta Laconian roof tiles with stamps "Δ" and "ΔA".

Date: first phase without exterior columns was late seventh century BC based on associated pottery; the exterior columns were added in the sixth century BC.

AYION PANDON, *EARLY ARCHAIC REMAINS*

Themelis (1965) 207, pl. 213a.

Although revetment from a roof was discovered, no structure has been found which can be associated with it.

Remains: terracotta semicircular antefix or acroterion.

Date: late seventh or early sixth century BC based on style of revetment.

LONGA, *EARLY ARCHAIC TEMPLE 'B' FROM THE SANCTUARY OF APOLLO KORYTHOS* (*figure 33a*).

Bates (1920) 293; Schweitzer (1922) 310-315; Valmin (1930) 174-177; Versakis (1916) 71-74, figs. 2-4, 7.

Among the temples in the sanctuary of Apollo Korythos, temple 'B' consisted of walls running northwest to southeast. It was a long and narrow structure, only 4.14 m wide, and had two or three rooms The pronaos had two columns in antis.

Remains: rubble foundations and wall socles; two column bases in antis; mud-brick; small poros column; terracotta sima fragment.

Date: second half of seventh century BC.

LONGA, *EARLY ARCHAIC TEMPLE 'D' FROM THE SANCTUARY OF APOLLO KORYTHOS* (*figure 33b*).

Bates (1920) 293; Schweitzer (1922) 310-315; Versakis (1916) 81-83, figs. 5-7.

The oldest temple at the site, *c.* 5.05 m wide by about 10 m long, consisted of three rubble walls and an interior colonnade.

Remains: rubble walls and foundations; traces of mud-brick; two stone column bases in interior along the central axis.

Date: mid seventh century BC.

GAZETTEER FOR ELEIA

ELIS, *EARLY ARCHAIC REMAINS FROM THE SANCTUARY OF ATHENA*

Walter (1915) 61-63; Walter (1913) 145-150, figs. 41-42.

A fifth century BC temple of Athena, made of worked stone, probably had a predecessor judging from the architectural terracottas discovered near the temple.

Remains: terracotta triglyphs; terracotta simas.
Date: late seventh or early sixth century BC based on the style of revetment.

KOMBOTHEKRA, *EARLY ARCHAIC TEMPLE OF ARTEMIS LIMNATIS (figures 16a, 35c, and 41d, plate 28).*

Müller (1908) 323-326; Sinn (1981) 25-71; Sinn (1979) 45-55.

The temple facing south measured *c.* 5.80 x 12.40 m and was built in the early sixth century. It was renovated later in that century by the addition of stone Doric features. Its plan was of a pronaos, naos, and adyton. A stylobate encircles this cella building but a peristyle appears to never have been erected. As a variety of roof tiles were found, it is unclear to which phase each type belonged.

Remains: rubble foundations and lower part of walls; mud-brick traces; paving around cella; terracotta three-peaked antefix, terracotta sima; terracotta lion's head spout; terracotta Corinthian roof tiles including a hip tile; Late Archaic stone threshold, column bases, columns, capitals, architrave fragments, triglyphs, metopes, and a cornice fragment.
Date: first half of sixth century BC based on style of antefix; renovated *c.* 500 BC.

OLYMPIA, *OLD HERAION (figure 35b).*

Dörpfeld (1935) 137-151, figs. 27-36, pls. 5, 17; Hege and Rodenwaldt (1936) 22; Heiden (1990) 41-46, pl. 3a-b; Mallwitz (1966) 310-376; Riemann (1946-7) 30-54; Searls and Dinsmoor (1945) 63-66.

Beneath the later Heraion's opisthodomos are remains of an earlier wall built of large cobbles. It may be that it belongs to an early temple with the same cella width as its successor. This non-peripteral temple probably had walls of mud-brick atop a rubble socle. The temple could have been about 10 x 40 m. The interior may have had the same plan as the later Heraion of tongue walls alternating with wooden columns; it may also have had a side door in the northwest corner of the cella.

Remains: foundations; possible undecorated three-peaked antefixes.
Date: late eighth or early seventh century based on votives and pottery found beneath its foundations.

OLYMPIA, *HERAION (figures 35a, 36-37, and 41a-c, plates 29-37).*

Curtius and Adler (1892) 27-36, 168-169, 190-192, figs. 1-5, 14, pls. 18-23, 98, 115-116; Dörpfeld (1935) 161-185, figs. 39-48, pls. 5, 9-16; Hege and Rodenwaldt (1936) 23; Herrmann (1972) 92-97, figs. 58-63; Kalpaxis (1975) 83-96, figs. 1-6, pl. 24; Mallwitz (1972) 138-149, figs. 108-117; Mallwitz (1966) 310-376, figs. 1-45; Mallwitz (1968) 133-136; Riemann (1946-7) 30-54; Searls and Dinsmoor (1945) 62-80, fig. 3; Sinn (1984) 77-87; White (1965) 178; Yalouris (1972) 85-98, fig. 1, pls. 37-40, ills. 1-3; Yalouris (1967-8) 57-65, pls. 8-12.

The second temple of Hera is a well-preserved temple comprising of a three-stepped stylobate upon which stands a peristyle. The preserved columns are from different periods suggesting that the original columns were of wood and slowly replaced in stone. Pausanias confirms this theory in that he saw an oak column still preserved in the opisthodomos. The plan has a pronaos and opisthodomos, both with antae and two columns in antis. The opisthodomos probably had a metal grille to enclose the area for storage of votives. The cella had piers along the interior walls which may have attached to wooden columns so as to create niches with a bisecting column. The cult statue base stood at the rear of the cella. The roof was decorated with Laconian-type tiles with semicircular antefixes and enormous disc acroteria. Several fragments of stone sculpture has sometimes been associated with the decoration of the temple either for the cult statue or for the pediment.

Remains: foundations; three-stepped stylobate; capitals and columns of varying dates; orthostates in situ; ashlar wall blocks in situ; cuttings for antae; cuttings and threshold for cella door; traces of columns in antis in both pronaos and opisthodomos; cuttings for grilles in opisthodomos; cuttings and markings for interior wall piers; cuttings for parallel interior colonnade; cult statue base; possibly a colossal head of Hera; possibly sculpture of lion's paw; Laconian-type roof tiles; semicircular antefixes; disc acroteria.

Date: first quarter of the sixth century BC based on sherds found beneath the floor and the style of roof revetment.

PRASIDAKI, *EARLY ARCHAIC REMAINS*

Yalouris (1971) 245-251, fig. 10.

A Classical temple was discovered along with Archaic votives and a fragment of a terracotta disc acroterion probably from its predecessor.

Remains: disc acroterion.

Date: early sixth century based on the style of the terracotta disc.

GAZETTEER FOR ACHAIA

AIGIERA, *EARLY ARCHAIC TEMPLE OF ARTEMIS-IPHIGENIA* (*figure 39*).

Alzinger (1985a) 11; id. (1985b) 430-445, figs. 3, 24, 27-41; id. (1984) 15; id. (1983) 35-40; id. (1981-2) 9; id. (1978) 147-156; id. (1976) 162-165; H.W. Catling (1980-1) 22; id. (1979-80) 37; Gogos (1986-7) 109-139; Touchais (1981) 803; id. (1980) 614-617.

The foundations for all four walls of the cella were preserved. The temple was not peripteral, but it seems instead to have had a central colonnade. The temple was re-roofed in the late sixth century.

Remains: rubble foundations; Late Archaic roof tiles, antefixes, and acroteria.

Date: temple built in the seventh century BC based on associated pottery and votives; reroofed in the late sixth century BC.

ABBREVIATIONS

AA	*Archäologischer Anzeiger*
AAA	Αρχαιολογικα Αναλεκτα εξ Αθηνων
ADelt	Αρχαιολογικον Δελτιον
AE	Αρχαιολογικη Εφημερις
AJA	*American Journal of Archaeology*
AM	*Mitteilungen des Deutschen Archäologischen Instituts, Athenische Abteilung*
AntCl	*Antiquité Classique*
AR	*Archaeological Reports*
ASAtene	*Annuario della Scuola Archeologica di Atene*
BABesch	*Bulletin Antieke Beschaving*
BCH	*Bulletin de Correspondance Hellénique*
BJ	*Bonner Jahrbücher*
BSA	*Annual of the British School at Athens*
CRAI	*Comptes Rendus de l'Académie des Inscriptions et Belles-Lettres*
Ergon	Εργον της εν Αθηναις Αρχαιολογικης Εταιρειας
JdI	*Jahrbuch des Deutschen Archäologischen Instituts*
JFA	*Journal of Field Archaeology*
JHS	*Journal of Hellenic Studies*
ÖJh	*Jahreshefte des Österreichischen Archäologischen Instituts in Wien*
OpAth	*Opuscula Atheniensia*
Praktika	Πρακτικα της εν Αθηναις Αρχαιολογικης Εταιρειας
RA	*Revue Archéologique*
REA	*Revue des Études Anciennes*
REG	*Revue d'Études Grecques*
RhM	*Rheinisches Museum für Philologie*
RM	*Mitteilungen des Deutschen Archäologischen Instituts, Römische Abteilung*

SELECTED BIBLIOGRAPHY

Adshead, K., (1986). *Politics of the Archaic Peloponnese*. Aldershot: Avebury Publishing Co.

Åkerström, Å., (1966). *Die Architektonischen Terrakotten Kleinasiens*. Lund: CWK Gleerup.

Alzinger, W., (1985a). "Grabungen 1984: Aigeira", *ÖJh* 56, 11.

Alzinger, W., (1985b). "Aigeira - Hyperesia und die Siedlung Phelloë in Achaia I: Akropolis", *Klio* 67, 426-451.

Alzinger, W., (1984). "Grabungen 1983: Aigeira - Hyperesia", *ÖJh* 55, 15.

Alzinger, W., (1983). "Grabungen 1982: Aigeira - Hyperesia", *ÖJh* 54, 35-40.

Alzinger, W., (1981-2). "Grabungen 1978-8: Aigeira - Achaia", *ÖJh* 53, 9.

Alzinger, W., (1978). "Aigeira 1976-77", *AAA* 11, 147-156.

Alzinger, W., (1976). "Aigeira 1975", *AAA* 9, 162-165.

Amandry, P., (1952). "Observations sur les Monuments de l'Heraion d'Argos", *Hesperia* 21, 222-274.

Amandry, P., (1940-1), "Chronique des fouilles - Pallantion", *BCH* 64-5, 241-242.

Amyx, D., (1988). *Corinthian Vase-Painting of the Archaic Period*. Berkeley: University of California Press.

Antonaccio, C.M., (1992). "Terraces, Tombs, and the Early Argive Heraion", *Hesperia* 61, 85-105.

Austin, M., (1970). *Greece and Egypt in the Archaic Age*. Cambridge: The Cambridge Philological Society.

Barrett, W., (1954). "Bacchylides, Asine, and Apollo Pythaieus", *Hermes* 82, 428-429.

Bates, W., (1920a). "Archaeological News - Orchomenos", *AJA* 24, 96.

Bates, W., (1920b). "Archaeological News, 1920 - Longas", *AJA* 24, 293.

Bergquist, B., (1990a). "Primary or Secondary Temple Function: The Case of Halieis (extended abstract)", in *Celebrations of Death and Divinity in Bronze Age in the Argolid: Proceedings of the Sixth International Symposium of the Swedish Institute at Athens* (ed. by R. Hägg and G. Nordquist). Stockholm: Paul Åströms förlag, 225-228.

Bergquist, B., (1990b). "Primary or Secondary Temple Function: The Case of Halieis", *OpAth* 18, 23-37.

Bergquist, B., (1967). *The Archaic Greek Temenos: A Study in Structure and Function*. Lund: CWK Gleerup.

Betancourt, P., (1977). *The Aeolic Style in Architecture*. Princeton: Princeton University Press.

Billot, M., (1990). "Terres cuites Architecturales d'Argos et d'Epidaure: Notes de typologie et d'histoire", *Hesperia* 59, 95-139.

Birge, D.E., Kraynak, L.H., and Miller, Stephen G., (1992). *Nemea I: Topographical and Architectural Studies - The Sacred Square, the Xenon, and the Bath*. Berkeley: University of California Press.

Blegen, C., (1939). "Prosymna: Remains of Post-Mycenaean Date", *AJA* 43, 410-444.

Blegen, C., (1937). *Prosymna*. Cambridge: Cambridge University Press.

Blegen, C., (1930). "Excavations at the Summit", in *Corinth III.1: Acrocorinth, Excavations in 1926* (ed. by C. Blegen, O. Broneer, R. Stillwell, and A. Bellinger). Cambridge: Harvard University Press, 3-4.

Blegen, C., (1927). "Excavations at Nemea, 1926", *AJA* 31, 421-427.

Blegen, C., (1921). *Korakou, a Prehistoric Settlement near Corinth*. Boston: American School of Classical Studies at Athens.

Blum, G. and Plassart, A., (1914). "Orchomène d'arcadie", *BCH* 38, 81-88.

Boardman, J., (1980). *The Greek Overseas*. London: Thames and Hudson.

Boardman, J., (1963). "Artemis Orthia and Chronology", *BSA* 58, 1-7.

Boëthius, A., (1922). "Zur Topographie des dorischen Argos" in Strena Philologica Upsaliensis: Festskrift Tillägnad Professor Per Persson. Upsala: Berlings Boktryckeri, 248-288.

Boethius, C., (1921-3). "Mycenae: The Hellenistic Period", *BSA* 25, 408-428.

Boetticher, A., (1886). *Olympia: Das fest und seine statte*. Berlin: Verlag von Julius Springer.

Bookidis, N., (1967). *Study of the Use and Geographical Distribution of Architectural Sculpture in the Archaic Period*. Bryn Mawr: PhD dissertation.

Bosanquet, R.C., (1905-6). "Excavations at Sparta, 1906: The Sanctuary of Artemis Orthia", *BSA* 12, 303-317.

Bowen, M., (1950). "Some Observations on the Origin of Triglyphs", *BSA* 45, 113-125.

Boyd, T. and Rudolf, W., (1978). "Excavations at Porto Cheli and Vicinity, Preliminary Report IV: The Lower Town of Halieis, 1970-77", *Hesperia* 47, 333-355.

Broneer, O., (1976). "The Isthmian Sanctuary of Poseidon", in *Neue Forschungen in Griechischen Heiligtümern* (ed. by U. Jantzen). Tübingen: Verlag Ernst Wasmuth, 42-46.

Broneer, O., (1971). *Isthmia I: Temple of Poseidon*. Princeton: Amercan School of Classical Studies.

Broneer, O., (1969). "Review of Orlandos", *AJA* 73, 478-480.

Broneer, O., (1966). "The Temple of Poseidon at Isthmia", in Χαριστηριον εις Αναστασιον Ορλανδον 3. Athens: Βιβλιοθηκη της εν Αθηναις Αρχαιολογικης Εταιρειας Αριο., 64-65.

Broneer, O., (1962). "Excavations at Isthmia, 1959-61", *Hesperia* 31, 21-22.

Broneer, O., (1961). "Isthmiaca", *Klio* 39, 249-258.

Broneer, O., (1959). "Excavations at Isthmia: Fourth Campaign 1957-8", *Hesperia* 28, 300-301, 339.

Broneer, O., (1958). "Excavations at Isthmia: Third Campaign 1955-6", *Hesperia* 27, 2-3, 28.

Broneer, O., (1955a). "Isthmia Excavations, 1954", *Hesperia* 24, 111-141.

Broneer, O., (1955b). "The Isthmian Sanctuary of Poseidon", *Archaeology* 8, 56-59.

Broneer, O., (1953). "Isthmia Excavations, 1952", *Hesperia* 22, 188.

Brownson, C., (1893). "Excavations at the Heraeum of Argos", *AJA* 8, 213-214.

Buschor, E., (1933). *Die Tondächer der Akropolis II: Stirnziegel*. Berlin and Leipzig: Verlag von Walter de Gruyter und Co.

Buschor, E. and von Massow, W., (1927). "Von Amyklaion", *AM* 52, 1-85.

Calligas, P., (1992). "From the Amyklaion", in Φιλολακων: *Lakonian Studies in Honour of Hector Catling* (ed. by J.M. Sanders). London: British School at Athens, 31-48.

Calligas, P., (1980). "Το ιερο του Απολλωνα Υπερτελεατα στη Λακωνια", *Lakonikai Spoudai* E, 10-30.

Callmer, C., (1943). *Studien zur Geschichte Arkadiens*. Lund: A.B. Gleerupska Universitetsbokhandeln.

Cartledge, P., (1992). "Early Lakedaimon: the making of a conquest state", in Φιλολακων: *Lakonian Studies in Honour of Hector Catling* (ed. by J.M. Sanders). London: British School at Athens, 54-55.

Cartledge, P., (1979). *Sparta and Lakonia: A Regional History 1300-362 BC.* London: Routledge and Kegan Paul.

Caskey, M., (1971). "News Letter from Greece - Porto Cheli", *AJA* 75, 301-302.

Caskey, J.L. and Amandry, P., (1952). "Investigations at the Heraion of Argos, 1949", *Hesperia* 21, 165-221.

Catling, H.W., (1990a). "A Sanctuary of Zeus Messapeus: Excavations at Aphyssou, Tsakona, 1989", *BSA* 85, 15-35.

Catling, H.W., (1990b). "Zeus Messapeus near Sparta: An Interim Report", *Lakonikai Spoudai* I, 276-295.

Catling, H.W., (1988-9). "Kokkinia", *AR*, 31.

Catling, H.W., (1987-8a). "Isthmia", *AR*, 21-22.

Catling, H.W., (1987-8b). "Lousoi", *AR*, 24.

Catling, H.W., (1985-6). "Menelaion and "Sparta Area", *AR*, 29-30.

Catling, H.W., (1984-5a). "Magoula", *AR*, 21.

Catling, H.W., (1984-5b). "Pallantion", *AR*, 22-23.

Catling, H.W., (1983). "Study at the Menelaion 1982-3", *Lakonikai Spoudai* Z, 28-29.

Catling, H.W., (1981-2). "Phoiniki", *AR*, 24.

Catling, H.W., (1980-1). "Aegira", *AR*, 22.

Catling, H.W., (1979-80). "Aegira", *AR*, 37.

Catling, H.W., (1977-8). "Magoula", *AR*, 31.

Catling, H.W., (1977). "Excavations at the Menelaion, 1976-7", *Lakonikai Spoudai* Γ, 408-415.

Catling, H.W., (1976-7). "Excavations at the Menelaion, Sparta, 1973-76", *AR*, 35-36.

Catling, H.W., (1976). "New Excavations at the Menelaion, Sparta", in *Neue Forschungen in Griechischen Heiligtümern*. Tübingen: Verlag Ernst Wasmuth, 77-78.

Catling, H.W., (1975). "Excavations of the British School at Athens at the Menelaion, Sparta, 1973-75", *Lakonikai Spoudai* B, 265-268.

Catling, H.W., (1974-5a). "Magoula", *AR*, 15.

Catling, H.W., (1974-5b). "Menelaion", *AR*, 15.

Catling, H.W., (1970-1). "Phoinikion", *AR*, 14.

Catling, H.W. and Shipley, D.G.J., (1989). "Messapian Zeus: An Early Sixth-Century Inscribed Cup from Lakonia", *BSA* 84, 187-200.

Catling, R., (1986). "Excavations at the Menelaion, 1985", *Lakonikai Spoudai* H, 205-216.

Cavanagh, W.G. and Crouwel, J.H., (1988). "Laconia Survey 1983-1986", *Lakonikai Spoudai* Θ, 77-79.
Chrisanthos, Ch., (1956). "Ανασκαφη εν Αμυκλαις", *Praktika*, 211-212.
Chrisanthos, Ch., (1960). "Ανασκαφη Αμυκλων", *Praktika*, 228-231.
Chrisanthos, Ch., (1961). "Ανασκαφη Αμυκλων", *Praktika*, 177-178.
Coldstream, J.N., (1976). "Hero-Cults in the Age of Homer", *JHS* 96, 8-17.
Cook, J.M., (1953a). "Mycenae, 1939-52: Part III. The Agamemnoneion", *BSA* 48, 30-68.
Cook, J.M., (1953b). "The Cult of Agamemnon at Mycenae", Γερας Αντωνιου Κεραμοπουλλου. Athens: Τυπογραφειον Μυρτιδη, 112-118.
Cook, R.M., (1970). "The Archetypal Doric Temple", *BSA* 65, 17-19.
Cook, R.M., (1951). "A Note on the Origin of the Temple", *BSA* 46, 50-52.
Cooper, F.A., (1992). *The Temple of Apollo Bassitas IV: Folio Drawings*. Princeton: American School of Classical Studies.
Cooper, F.A., (1979). "Arkadian Epikouroi and the Date of the Temple at Bassai", in *Greece and Italy in the Classical World: Acta of the XI International Congress of Classical Archaeology, London, 3-9 September 1978* (ed. by J.M. Coldstream and M.A.R. Colledge). London: G.A. Pindar and Sons Ltd, 210-211.
Cooper, F.A., (1978). *The Temple of Apollo at Bassai: A Preliminary Study*. New York: Garland.
Cooper, N.K., (1990). "Archaic Architectural Terracottas from Halieis and Bassai", *Hesperia* 59, 65-93.
Cooper, N.K., (1989). *The Development of Roof Revetment in the Peloponnese*. Jonsered: Paul Åströms förlag.
Cooper, N.K., (1980). "The Archaic Sanctuary at Bassai", in *Abstracts of Papers from the 81st Annual Meeting of the Archaeological Institute of America, December 1979* in *AJA* 84, 202.
Coulton, J.J., (1993). "The Toumba Building: its Architecture", in *Lefkandi II: The Protogeometric Building at Toumba part 2 - The Excavation, Architecture, and Finds* (ed. by M. Popham, P. Calligas, and L. Sackett). London: British School at Athens supplement volume 23, 33-70.
Coulton, J.J., (1979). "Doric Capitals: A Proportional Analysis", *BSA* 74, 81-153.
Coulton, J.J., (1977). *Greek Architects at Work: Problems of Structure and Design*. London: Paul Elek.
Coulton, J.J., (1976). *The Architectural Development of the Greek Stoa*. Oxford: Clarendon Press.
Coulton, J.J., (1975). "Review of Broneer's *Isthmia I: Temple of Poseidon*", *JHS* 95, 271-272.
Coulton, J.J., (1974). "Lifting in Early Greek Architecture", *JHS* 94, 1-19.
Curtius, E. and Adler, F., (1892). *Die Ergebnisse der vom Deutschen Reich veranstalteten Ausgrabung II: Topographie und Geschichte von Olympia - Die Baudenkmäler*. Berlin: Verlag von A. Asher and Co.
Daux, G., (1969). "Chronique des fouilles en 1968 - Argos (Aphrodision)", *BCH* 93, 986-1012.
Daux, G., (1968a). *Guide de Thasos*. Paris.
Daux, G., (1968b). "Chronique des fouilles en 1967 - Argos (Agora)", *BCH* 92, 1025.

Daux, G., (1966). "Chronique des fouilles en 1965 - Mycènes (Asprochomata)", *BCH* 90, 782.
Daux, G., (1963). "Chronique des fouilles en1962 - Prophitis Ilias", *BCH* 87, 748.
Daux, G., (1959a). "Chronique des fouilles en 1958 - Mycènes", *BCH* 83, 614-615.
Daux, G., (1959b). "Chronique des Fouilles en 1958 - Akovitika", *BCH* 83, 639-640.
Daux, G., (1959c). "Chronique des fouilles en 1958 - Pallantion (Mt. Boreion)", *BCH* 83, 625-628.
Daux, G., (1957). "Chronique des fouilles en 1956 - Argos", *BCH* 81, 673-677.
Dawkins, R.M., (1929). *The Sanctuary of Artemis Orthia at Sparta*: *JHS Supplement 5*. London: MacMillan and Co.
Dawkins, R.M., (1909-10). "Excavations at Sparta, 1910: Artemis Orthia - The History of the Sanctuary", *BSA* 16, 18-53.
Dawkins, R.M., (1908-9). "Excavations at Sparta, 1909: The Sanctuary of Artemis Orthia", *BSA* 15, 5-22.
Dawkins, R.M., (1907-8). "Excavations at Sparta, 1908: The Sanctuary of Artemis Orthia", *BSA* 14, 4-29.
Dawkins, R.M., (1906-7). "Excavations at Sparta, 1907: The Sanctuary of Artemis Orthia", *BSA* 13, 55-62.
Dawkins, R.M., (1905-6). "Remains of the Archaic Greek Period", *BSA* 12, 288-294.
Dawkins, R.M., Droop, J.P., and Wace, A.J.B., (1930). "A Note on the Excavation of the Sanctuary of Artemis Orthia", *JHS* 50, 329-336.
de la Geniere, J., (1993). "Statuaire Archäique de la Mère des Dieux en Arcadie et en Laconie", in *Sculpture from Arcadia and Laconia: Proceedings of an International Conference held at the American School of Classical Studies at Athens, April 10-14, 1992* (ed. by O. Palagia and W. Coulson). Oxford: Oxbow Books, 153-158.
de la Genière, J., (1991). "Pausanias et le sanctuaire de la Mère des dieux d'Akriai", *CRAI*, 257-265.
de la Genière, J., (1986). "Le culte de la Mère des dieux dans le Péloponnèse", *CRAI*, 29-46.
De Waele, F.J., (1933). "The Sanctuary of Asklepios and Hygieia at Corinth", *AJA* 38, 417-451.
Delivorrias, A., (1969). "Φοινικιον", *ADelt* 24B1, 138-41.
Delivorrias, A., (1968a). "Φοινικιον", *ADelt* 23B1, 153.
Delivorrias, A., (1968b). "Amyklai", *AAA* 1, 42-45.
Delivorrias, A., (1968c). "Amyklai", *BCH* 92, 815-816.
Demangel, R., (1952). "Review of Roebuck's *Corinth XIV: The Asklepieion and Lerna*", *AJA* 56, 222-224.
Demangel, R., (1937). "Triglyphes Bas", *BCH* 61, 421-438.
Demangel, R., (1931). "Sur l'Origine des Mutules Doriques", *RA* 35, 117-163.
Dengate, J., (1974). "The Archaic Doric Temple at Mases", in *Abstracts of Papers from the 76th Annual Meeting of the Archaeological Institute of America, December 1974*, 123.
Deshayes, J., (1956). "Travaux de l'école française, Argos", *BCH* 80, 366.
Deubner, L., (1904). "Zu dem Funden vom Kotilon", *RhM* 59, 474

Dickins, G., (1907-8). "Excavations at Sparta, 1908: The Hieron of Athena Chalkioikos", *BSA* 14, 142-146.
Dickins, G., (1906-7a). "Excavations at Sparta, 1907: The Hieron of Athena Chalkioikos", *BSA* 13, 137-154.
Dickins, G., (1906-7b). "Excavations at Sparta, 1907: A Sanctuary on the Megalopolis Road", *BSA* 13, 169-173.
Dinsmoor, W.B., (1950). *The Architecture of Ancient Greece*. London: B.T. Batsford.
Divita, A., (1984). "Arcadia: ripresa dei lavori a Pallantion", *ASAtene* 62, 254.
Dörpfeld, W., (1935). *Alt-Olympia*. Berlin: Verlag von E.S. Mittler and Sohn.
Dörpfeld, W., (1883). "Der Tempel der Athena in Tegea", *AM* 8, 284.
Drees, L., (1967). *Olympia*. London: Pall Mall Press.
Drerup, H., (1969). *Griechische Baukunst in Geometrischer Zeit*, in *Archaeologia Homerica* ii-O. Göttingen: Vandenhoeck and Ruprecht.
Droop, J., (1929). "Pottery", in *The Sanctuary of Artemis Orthia at Sparta*: *JHS Supplement 5* (ed. by R.M. Dawkins). London: MacMillan and Co., 52-116.
Dugas, C., (1921). "Le Sanctuaire d'Aléa Athéna à Tégée avant le IVe siècle", *BCH* 45, 335-435.
Dunbabin, T.J., (1951). "The Oracle of Hera Akraia at Perachora", *BSA* 46, 61-71.
Eckstein, F., (1969). Αναθηματα*: Studien zu den Weihgeschenken strengen stils im Heiligtum von Olympia*. Berlin: Gebr. Mann Verlag.
Fagerström, K., (1988). *Greek Iron Age Architecture: Developments Through Changing Times*. Göteborg: Paul Åströms förlag.
Faustoferri, A., (1993). "The Throne of Apollo at Amyklai: its Significance and Chronology", in *Sculpture from Arcadia and Laconia: Proceedings of an International Conference held at the American School of Classical Studies at Athens, April 10-14, 1992* (ed. by O. Palagia and W. Coulson). Oxford: Oxbow Books, 159-166.
Felsch, R., (1990). "Further Stamped Roof Tiles from Central Greece, Attica, and the Peloponnese", *Hesperia* 59, 321.
Felsch, R., (1980). "Apollon und Artemis oder Artemis und Apollon? Bericht von den Grabungen im neu entdeckten Heiligtum bei Kalapodi", *AA* 95, 38-115.
Fiechter, E., (1918). "Amyklae: Der Thron des Apollon", *JdI* 33, 107-245.
Foley, A., (1988). *The Argolid 800-600 BC*. Göteborg: Paul Åströms förlag.
Forrest, W., (1968). *History of Sparta*. London: Hutchinson University Library.
Fougères, G., (1898). *Mantinée et L'Arcadie Orientale*. Paris: Ancienne Librairie Thorin et Fils, 102-7.
French, E., (1993-4). "Tegea", *AR*, 18.
French, E., (1992-3). "Tegea", *AR*, 20-21.
French, E., (1991-2). "Tegea", *AR*, 17-18.
French, E., (1990-1). "Tegea", *AR*, 26.
Frickenhaus, A. and Müller, W., (1911). "Aus der Argolis", *AM* 36, 21-38.
Frickenhaus, A., Müller, W., and Oelmann, F., (1912). *Tiryns I*. Athens: Eleutheroudakis and Barth, 2-13.
Frödin, Ö. and Persson, A., (1938). *Asine: Results of the Swedish Excvations 1922-30*. Stockholm: Esselte aktiebolag, 149-151.
Furtwängler, A., Fiechter, E.R. and Thiersch, H., (1906). *Aegina: Das Heiligtum der Aphaia*. Munich.

Gebhard, E., (1987). "The Early Sanctuary of Poseidon at Isthmia", *AJA* 91, 475-476.

Gebhard, E. and Hemans, F., (1992). "University of Chicago Excavations at Isthmia, 1989, part I", *Hesperia* 61, 1-78.

Ginouvès, R., (1992). *Dictionnaire Méthodique de l'Architecture Grecque et Romaine II: Eléments constructifs*. Athens: École Française d'Athènes.

Ginouvès, R. and Martin, R., (1985). *Dictionnaire Méthodique de l'Architecture Grecque et Romaine I: Matériaux, Techniques de Construction, Techniques et Formes du Décor*. Athens: École Française d'Athènes.

Gogos, S., (1986-7). "Kult und Heiligtümer der Artemis von Aigeira", *ÖJh* 57, 109-139.

Goldberg, M., (1983). "Greek Temples and Chinese Roofs", *AJA* 87, 305-310.

Goldberg, M., (1982). "Archaic Greek Akroteria", *AJA* 86, 193-217.

Gomme, A., Andrewes, A. and Dover, K., (1970). *A Historical Commentary on Thucydides* 4. Oxford: Clarendon Press.

Granger, F., (1931). *Vitruvius on Architecture* I. London: William Heinemann Ltd., (from the Loeb Classical Library).

Greek Archaeological Service., (1967). "Κουρτακι", *ADelt* 22B1, 178-179.

Gruben, G., (1986). *Die Tempel der Griechen*. Munich: Hirmer Verlag.

Hammond, N.G.L., (1954). "The Heraeum at Perachora and Corinthian Encroachment", *BSA* 49, 93-102.

Harl-Schaller, F., (1972-3). "Die archäischen 'Metopen' aus Mykene", *ÖJh* 50, 94-116.

Hege, W. and Rodenwaldt, G., (1936). *Olympia*. London: Sidgwick and Jackson Ltd.

Heiden, J., (1990). "Die Archaischen Dächer von Olympia", *Hesperia* 59, 41-46.

Heiden, J., (1987). *Korinthische Dachziegel: zur Entwicklung der Korinthischen Dacher*. Frankfurt: Verlag Peter Lang.

Hejnic, J., (1961). *Pausanias the Perieget and the Archaic History of Arcadia*. Prague: Nakladatelstvi Ceskoslovenske Akademie Ved.

Hemans, F., (1991). "New Discoveries in the Archaic Temple at Isthmia", in *Abstracts of Papers from the 92nd Annual Meeting of the Archaeological Institute of America, December 1990* in *AJA* 95, 301-302.

Hemans, F., (1989). "The Archaic Roof Tiles at Isthmia, a Re-examination", *Hesperia* 58, 251-266.

Herrmann, H., (1972). *Olympia: Heiligtum und Wettkampfstate*. Munich: Hirmer Verlag.

Hiller von Gaertringen, F. and Lattermann, H., (1911). *Arkadische Forschungen*. Berlin: Verlag der Königl.

Hodge, A.T., (1960). *The Woodwork of Greek Roofs*. Cambridge: University Press.

Holland, L., (1917). "The Origin of the Doric Entablature", *AJA* 21, 117-158.

Hondius, J.J.E. and Hondius-van Haeften, M.A., (1919-21). "Laconia: Notes on Typography - Hyperteleaton", *BSA* 24, 147.

Hood, M.S.F., (1958). "Galataki", *AR*, 5.

Hood, M.S.F., (1957). "Galataki", *AR*, 7.

Hübner, G., (1978). "Dachterrakotten im Magazin des Museums von Nauplia", in *Tiryns Forschungen und Berichte VIII* (ed. K. Müller). Mainz: Verlag Philipp von Zabern, 117-136.

Huxley, G., (1962). *Early Sparta*. London: Faber and Faber.
Jameson, M., (1982). "The Submerged Sanctuary of Apollo at Halieis in the Argolid of Greece", *National Geographic* 14, 363-367.
Jameson, M., (1974). "The Excavation of a Drowned Greek Temple", *Scientific American*, 111-119.
Jameson, M., (1973-4). "Excavations at Halieis (Porto Cheli)", *ADelt* 29B2, 261-264.
Jameson, M., (1973). "Halieis at Porto Cheli", in *Colston Papers: Proceedings of the 23rd Symposium of the Colston Research Society Bristol, 1971*. London, 219-229.
Jameson, M., (1972). "Excavations at Porto Cheli: Excavations at Halieis, Final Report", *ADelt* 27B1, 233-236.
Jameson, M., (1971). "Excavations at Porto Cheli", *ADelt* 26B1, 114-119.
Jameson, M., (1969). "Excavations at Porto Cheli and Vicinity, Preliminary Report I: Halieis, 1962-68", *Hesperia* 38, 311-342.
Jantzen, U., (1975). *Führer durch Tiryns*. Athens: Deutsches Archäologisches Institut, 96-107, 126-131.
Jost, M., (1985). *Sanctuaires et Cultes d'Arcadie*. Paris: Librairie Philosophique J. Vrin.
Jost, M., (1974). "Sur les traces de Pausanias en Arcadie", *RA*, 179-186.
Jost, M., (1973). "Pausanias en Mégalopolitide", *REA* 75, 241-267.
Kalloutsi, K., (1930). Κυνουριακα. Athens.
Kalpaxis, A., (1976). *Früharchaische Baukunst in Griechenland und Kleinasien*. Athens.
Kalpaxis, A., (1975). "Bemerkungen zu den Innensäulen des Heraion von Olympia", *AM* 90, 83-96.
Karageorga, T., (1963). "Αρχαια Μαντινεια", *ADelt* 18B1, 88-89.
Karageorga, T., (1961-2). "Δοκιμαστικη Ανασκαφη εις Εκκλησουλα Αρκαδιας", *ADelt* 17B1, 86-88.
Karo, G., (1914). "Archäologische Funde im Jahre 1913 - Orchomenos", *AA* 29, 160-161.
Kästner, V., (1990). "Scheibenförmige Akrotere in Griechenland und Italien", *Hesperia* 59, 251-264.
Kelly, T., (1976). *A History of Argos*. Minneapolis.
Kirsten, E., (1958). "Heiligtum und Tempel der Artemis Orthia zu Sparta in ihrer ältesten Entwicklungsphase", *BJ* 158, 170-176.
Kjellberg, L., (1940). *Larisa am Hermos II: Die Architektonischen Terrakotten*. Stockholm: Kongl. Vitterhets Historie och Antikvitets Akademien.
Klein, N., (1991). *The Origins of Doric Architecture on the Mainland of Greece in the Archaic Period: Form and Function of the Geison*. Bryn Mawr: PhD dissertation.
Knell, H., (1991). *Vitruvs Architekturtheorie*. Darmstadt: Wissenschaftliche Buchgesellschaft.
Koch, H., (1915). "Studien zu den Campanischen Dachterrakotten", *RM* 30, 1-115.
Koch, H., (1912). *Dachterrakotten aus Campanien*. Berlin: Druck und Verlag von Georg Reimer.
Koenigs, W., (1975). "Review of Broneer's *Isthmia I: Temple of Poseidon*", *Gnomon* 47, 402-406.

Kolokotsas, K.G., (1990). "Αρμονικες Χαραξεις στα αρχαικα αρχιτεκτονικα πηλινα του Αργους και της Επιδαυρου", *Hesperia* 59, 141-148.
Kourouniotes, K., (1910a). "Το εν Βασσαις Αρχαιοτερον Ιερον του Απολλωνος", *AE*, 271-332.
Kourouniotes, K., (1910b). "Ανασκαφη Λυκαιου", *AE*, 29-36.
Kourouniotes, K., (1909). "Ανασκαφη Λυκαιου", *Praktika*, 185-200.
Kourouniotes, K., (1904). "Ανασκαφη Λυκαιου", *AE*, 153-178.
Kourouniotes, K., (1903a). "Ανασκαφη εν Κωτιλω", *AE*, 151-188.
Kourouniotes, K., (1903b). "Ανασκαφη Λυκαιου", *Praktika*, 51-52.
Kourouniotes, K., (1901). "Porosskulpturen aus Mykene", *JdI* 16, 18-22.
Lane, E.A., (1933-4). "Lakonian Vase-Painting", *BSA* 34, 99-189.
Lang, M., (1977). *Cure and Cult in Ancient Corinth. A Guide to the Asklepieion.* Princeton: American School of Classical Studies at Athens.
LeRoy, C., (1967). *Fouilles de Delphes II: Topographie et Architecture- Les Terres Cuites Architecturales.* Paris: Editions de Boccard.
Legrand, P., (1905). "Antiquités de Trézène", *BCH* 29, 269-315.
Lemerle, P., (1939). "Chronique des fouilles en 1939 - Mycènes", *BCH* 63, 296.
Libertini, G., (1939-40). "Scavi in arcadia", *ASAtene* new series1-2, 225-230.
Lorimer, H., (1950). *Homer and the Monuments.* London: MacMillan and Co. Ltd.
Mallwitz, A., (1981). "Kritisches zur Architektur Griechenlands im 8. und 7. Jahrhundert", *AA* 96, 599-642.
Mallwitz, A., (1972). *Olympia und Seine Bauten.* Munich: Prestel-Verlag.
Mallwitz, A., (1968). "Ein Scheibenakroter aus Olympia", *AM* 83, 124-146.
Mallwitz, A., (1966). "Das Heraion von Olympia und Seine Vorgänger", *JdI* 81, 310-376.
Markman, S., (1951). "Building Models and the Architecture of the Geometric Period", in *Studies Presented to D.M. Robinson* (ed. by G.E. Mylonas). St. Louis: Washington University.
Martin, R., (1976). "Bathycles de Magnésie et le 'trône' d'Apollon à Amyklae", *RA*, 205-218.
Martin, R., (1970). "Review of Orlandos", *RA*, 343-345.
Martin, R., (1968). *Manuel d'architecture Grecque I: Matériaux et techniques.* Paris: Éditions A. et J. Picard.
Martini, W., (1986). "Vom Herdhaus zum Peripteros", *JdI* 101, 23-36.
Mazarakis-Ainian, A., (1988). "Early Greek Temples: Their Origin and Function", in *Early Greek Cult Practice: Proceedings of the Fifth International Symposium at the Swedish Institute at Athens, 26-29 June 1986* (ed by R. Hägg, N. Marinatos, and G.C. Nordquist). Stockholm: Paul Åströms förlag, 105-119.
Mazarakis-Ainian, A., (1985). "Contribution à l'Étude de l'Architecture Religieuse Greque des Âges Obscurs", *AntCl* 54, 5-48.
McDonald, W.A. and Rapp, G., Jr., (1972). *The Minnesota Messenia Expedition.* Minneapolis: University of Minnesota Press.
Megaw, A.H.S., (1962-3a). "Nea Ekklisoula", *AR*, 17.
Megaw, A.H.S., (1962-3b). "Prophitis Ilias", *AR*, 16.
Mendel, G., (1901). "Fouilles de Tégée", *BCH* 25, 256-257.
Meyer, E., (1939). *Peloponnesische Wanderungen.* Zurich: Max Niehans Verlag.
Michaud, J.-P., (1972). "Halieis (Porto Chéli)", *BCH* 96, 651-652.

Michaud, J.-P., (1971a). "Porto Chéli (Halieis)", *BCH* 95, 875-878.
Michaud, J.-P., (1971b). "Chronique des Fouilles - Akovitika", *BCH* 95, 892.
Michaud, J.-P., (1970). "Chronique des Fouilles - Akovitika", *BCH* 94, 995.
Middleton, J., (1886). "A Suggested Restoration of the Great Hall in the Palace of Tiryns", *JHS* 7, 163.
Miller, Stella., (1984). "Excavations at Nemea, 1983", *Hesperia* 53, 176.
Miller, Stella., (1983). "Excavations at Nemea, 1982", *Hesperia* 52, 72-75.
Miller, Stephen G., (1990). *Guide to Site and Museum at Nemea.* Berkeley: University of California Press.
Miller, Stephen G., (1982a). "Kleonai, the Nemean Games, and the Lamian War", *Hesperia Supplement 20*, 100-108.
Miller, Stephen, G., (1982b). "Excavations at Nemea, 1981", *Hesperia* 51, 22-23.
Miller, Stephen G., (1981). "Excavations at Nemea, 1980", *Hesperia* 50, 48-55.
Miller, Stephen G., (1980). "Excavations at Nemea, 1979", *Hesperia* 49, 178-191.
Miller, Stephen G., (1979). "Excavations at Nemea, 1978", *Hesperia* 48, 81-95
Miller, Stephen G., (1978). "Excavations at Nemea, 1977", *Hesperia* 47, 63-64.
Miller, Stephen G., (1977a). "Excavations at Nemea, 1976", *Hesperia* 46, 21.
Miller, Stephen G., (1977b). "Nemea", *ADelt* 32B1, 57-58.
Miller, Stephen G., (1976a). "Excavations at Nemea, 1975", *Hesperia* 45, 190.
Miller, Stephen G., (1976b). "New Problems at Nemea", in *Neue Forschungen in Griechischen Heiligtümern* (ed. by U. Jantzen). Tübingen: Verlag Ernst Wasmuth, 68-69.
Miller, Stephen G., (1975). "Excavations at Nemea, 1973-4", *Hesperia* 44, 158-160.
Miller, Stephen G., (1973-4). "Nemea 1974", *ADelt* 29B2, 256-259.
Mitsopoulos-Leon, V., (1993). "The Statue of Artemis at Lousoi", in *Sculpture from Arcadia and Laconia: Proceedings of an International Conference held at the American School of Classical Studies at Athens, April 10-14, 1992* (ed. by O. Palagia and W. Coulson). Oxford: Oxbow Books, 33-40.
Mitsopoulos-Leon, V., (1990). "Ein Neuer Antefixtyp aus dem Heiligtum der Artemis in Lousoi", *Hesperia* 59, 163-166.
Mitsopoulos-Leon, V. and Glaser, F., (1988). "Lousoi 1987", *ÖJh* 58, 14-18.
Morgan, C., (1990). *Athletes and Oracles: the Transformation of Olympia and Delphi in the Eighth Century BC.* Cambridge: Cambridge University Press.
Morgan, C., (1988). "Corinth, the Corinthian Gulf, and Western Greece", *BSA* 83, 313-338.
Morgan, M., (1914). *Vitruvius: The Ten Books on Architecture.* Cambridge, MA: Harvard University Press.
Müller, K., (1923). "Gebäudemodelle Spätgeometrischer Zeit", *AM* 48, 52-68.
Müller, K., (1908). "Artemistempel bei Kombothekra", *AM* 32, 323-326.
Müller-Wiener, W., (1988). *Griechisches Bauwesen in der Antike.* Munich: Verlag C.H. Beck.
Mylonas, G., (1966a). *Mycenae and Mycenaean Age.*
Mylonas, G., (1966b). "Ανασκαφη Μυκηνων", *Praktika*, 111-114.
Mylonas, G., (1965). "Ανασκαφη Μυκηνων", *Praktika*, 95-96.
Mylonas, G., (1957). *Ancient Mycenae: The Capital City of Agamemnon.* London: Routledge and Kegan Paul Ltd.

Nilsson, M., (1950). *The Minoan-Mycenaean Religion and its Survival in Greek Religion*. Lund.

Norman, N., (1984). "The Temple of Athena Alea at Tegea", *AJA* 88, 171.

Oikonomos, G., (1931). "Ο εκ του Αργειου Ηραιου πηλινος οικιοκος κατα νεαν συμπληρωσιν", *AE*, 1-53.

Orlandos, A., (1968). Η Αρκαδικη Αλιφειρα και τα Μνημεια της. Athens: Library of the Archaeological Society in Athens.

Orlandos, A., (1962). "Αμυκλαι", *Ergon*, 133.

Orlandos, A., (1961). "Αμυκλαι", *Ergon*, 172-174.

Orlandos, A., (1960). "Αμυκλαι", *Ergon*, 167-173.

Orlandos, A., (1959-60). Τα Υλικα δομης των αρχαιων Ελληνων. Athens: Βιβλιοθηκη της εν Αθηναις Αρχαιολογικης Εταιρειας.

Orlandos, A., (1958). "Σολυγεια (Γαλατακι)", *Ergon*, 112-118.

Orlandos, A., (1956). "Αμυκλαι", *Ergon*, 100-104.

Østby, E., (1991). "The Temples of Pallantion: Archaeological Collaboration in Arcadia," in *Papers from the Norwegian Institute at Athens* 1, 41-54.

Østby, E., (1986). "The Archaic Temple of Athena Alea at Tegea", *OpAth* 16, 75-102.

Østby, E., (1984). "The Archaic Temple of Athena Alea at Tegea", *AAA* 17, 118-124.

Østby, E., Luce, J.-M., Nordquist, G.C., Tarditi, C., and Voyatzis, M., (1994). "The Sanctuary of Athena Alea at Tegea: First Preliminary Report (1990-92)", *OpAth* 20, 89-141

Palagia, O., (1993). "An Athena Promachos from the Acropolis of Sparta", in *Sculpture from Arcadia and Laconia: Proceedings of an International Conference held at the American School of Classical Studies at Athens, April 10-14, 1992* (ed. by O. Palagia and W. Coulson). Oxford: Oxbow Books, 167-175.

Papahatzis, N., (1980). Παυσανιου Ελλαδος Περιηγησις Βιβλια *7* και *8:* Αχαικα και Αρκαδικα.4 Athens: Εκδοτικη Αθηνων.

Papahatzis, N., (1979). Παυσανιου Ελλαδος Περιηγησις Βιβλια *4,5,* και *6:* Μεσσηνιακα και Ηλιακα 3. Athens: Εκδοτικη Αθηνων.

Papahatzis, N., (1976). Παυσανιου Ελλαδος Περιηγησις Βιβλια *2* και *3:* Κορινθιακα και Λακωνικα 2. Athens: Εκδοτικη Αθηνων.

Papathanasopoulos, G., (1970). "Ακοβιτικα Καλαματας", *ADelt* 25B1, 177-179.

Parlama, L., (1971). "Βασσαι, ναος Επικουριου Απολλωνος", *ADelt* 26B1, 142-146.

Paton, J., (1904). "Archaeological News: Cotilum - Two Temples", *AJA* 8, 358.

Payne, H., (1940). *Perachora I: The Sanctuary of Hera Akraia and Limenia* (ed. by T.J. Dunbabin). Oxford: Clarendon Press.

Payne, H., (1931). *Necrocorinthia: A Study of Corinthian Art in the Archaic Period.* Oxford: Clarendon Press.

Pfaff, C., (1990). "Three-peaked Antefixes from the Argive Heraion", *Hesperia* 59, 149-156.

Phaklaris, P., (1990). Αρχαια Κυνουρια. Athens: Ταμειο Αρχαιολογικων πορων και Απαλλοτριρσεων Διευθυνση Δημοσιευματων , 173-178.

Pikoulas, G., (1988). Η Νοτια Μεγαλοπολιτικη Χωρα απο τον *8ο* Π.Χ. ως τον *4ο* μ.Χ. αιωνα. Athens: Η Μεγαλη Βιβλιοθηκη.

Pipili, M., (1987). *Laconian Iconography of the Sixth Century BC.* Oxford: Oxford University Committee for Archaeology, 80-82.
Plassart, A., (1915). "Orchomène D'Arcadie", *BCH* 39, 53-127.
Plommer, H., (1984). "The Old Platform in the Argive Heraeum", *JHS* 104, 183-184.
Plommer, H., (1977). "Shadowy Megara", *JHS* 97, 75-88.
Pollard, J., (1950). "A New Site on Mount Loutraki", *BSA* XLV, 63-65.
Protonotariou-Deilaki, E., (1963). "Ανασκαφη εις Προφητην Ηλιαν της Κοινοτητος Αδριανου", *ADelt* 18B, 65-66.
Reichel, W. and Wilhelm, A., (1901). "Das Heiligtum der Artemis zu Lusoi", *ÖJh* 4, 8-15; 61.
Rhodes, R., (1987a). "Early Corinthian Architecture and the Origins of the Doric Order", *AJA* 91, 477-480.
Rhodes, R., (1987b). "Rope Channels and Stone Quarrying in the Early Corinthia", *AJA* 91, 545-551.
Rhodes, R., (1984). *The Beginnings of Monumental Architecture in the Corinthia.* University of North Carolina at Chapel Hill: PhD dissertation.
Rhomaios, K., (1958). "Ανασκαφαι εν Παλλαντιον και Ιασω", *Praktika*, 165-166.
Rhomaios, K., (1957). "Ιερον Αθηνας Σωτειρας και Ποσειδωνος κατα την Αρκαδικην Ασεαν", *AE*, 114-163.
Rhomaios, K., (1953). "Περιοδεια κατα την Κυνουριαν", *Praktika*, 251-7.
Rhomaios, K., (1952). "Τεγεατικον Ιερον Αρτεμιδος Κνακεατιδος," *AE*, 1-31.
Rhomaios, K., (1933). "Εκ του Αρχαιοτερου ναον της Φιγαλειας", *AE*, 1-25.
Rhomaios, K., (1911). "Ερευναιεν Κυνουρια", *Praktika*, 253-279.
Rhomaios, K., (1910). "Γενικη Εκθεσις περι των εν Τεγεα Ανασκαφων εν 1910", *Praktika*, 274-276.
Rhomaios, K., (1909). "Ανασκαφαι του ναου της Αλεας", *Praktika*, 302-319.
Ridgway, B., (1993). *The Archaic Style in Greek Sculpture.* Chicago: Ares Publishers.
Riemann, H., (1946-7). "Die Bauphasen des Heraions von Olympia", *JdI* 61-62, 30-54.
Robert, C., (1920). "Die Hera von Tiryns", *Hermes* 55, 373-387.
Robinson, H.S., (1986). "Corinth as a Center for the Manufacture of Architectural Terracottas", in *Acti Centri Historiae Terra Antiqua Balcanica* 1, 41-54.
Robinson, H.S., (1984). "Roof Tiles of the Early Seventh Century BC", *AM* 99, 55-66.
Robinson, H.S., (1976a). "Excavations at Corinth: Temple Hill, 1968-72", *Hesperia* 45, 203-235.
Robinson, H.S., (1976b). "Temple Hill, Corinth", in *Neue Forschungen in Griechischen Heiligtümern* (ed. by U. Jantzen). Tübingen: Verlag Ernst Wasmuth, 239-250.
Robinson, H.S., (1971). "Excavations on Temple Hill", *ADelt* 26B1, 96-100.
Robinson, H.S., (1962). "Excavations at Corinth, 1960", *Hesperia* 31, 114.
Rodenwaldt, G. and Schlief, H., (1940). *Korkyra I: Der Artemis tempel - Architektur, Dachterrakotten, Inschriften.* Berlin.
Roebuck, C., (1951). *Corinth XIV: The Asklepieion and Lerna.* Princeton: American School of Classical Studies at Athens.

Roebuck, M., (1990). "Archaic Architectural Terracottas from Corinth", *Hesperia* 59, 47-63.
Roebuck, M., (1955). "Excavations at Corinth: 1954", *Hesperia* 24, 147-157.
Rostoker, W. and Gebhard, E., (1981). "The Reproduction of Roof Tiles for the Archaic Temple of Poseidon at Isthmia, Greece", *JFA* 8, 211-227.
Roux, G., (1974). "Review of Broneer's *Isthmia I: Temple of Poseidon*", *AJA* 78, 305-306.
Roux, G., (1958). *Pausanias en Corinthie*. Paris: Société d'Édition les Belles Lettres.
Roux, G., (1957). "Le sanctuaire argien d'Apollon Pythéen", *REG* 70, 474-487.
Salmon, J., (1984). *Wealthy Corinth: A History of the City to 338 BC*. Oxford: Clarendon Press.
Salmon, J., (1972). "The Heraeum at Perachora and the Early History of Corinth and Megara", *BSA* 67, 159-204.
Schliemann, H., (1886). *Tiryns*. London: John Murray.
Schwandner, E.-L., (1985). *Der ältere Porostempel der Aphaia auf Aegina*. Berlin: Verlag Walter de Gruyter und Co.
Schweitzer, A., (1922). "Archäologische Funde in den Jahren 1916-22: Messenien", *AA* 37, 310-315.
Scranton, R., (1941). *Greek Walls*. Cambridge, MA: Harvard University Press.
Searls, H. and Dinsmoor, W.B., (1945). "Date of the Heraeum at Olympia", *AJA* 49, 62-80.
Sinn, U., (1990). "Das Heraion von Perachora: eine sakrale Schutzzone in der Korinthischen Peraia", *AM* 105 (1990), 53-116.
Sinn, U., (1984). "Εχτυπον. Der sog. Hera-kopf aus Olympia", *AM* 99, 77-87.
Sinn, U., (1981). "Das Heiligtum der Artemis Limnatis bei Kombothekra", *AM* 96, 25-71.
Sinn, U., (1979). "Das Heiligtum der Artemis Limnatis bei Kombothekra: Elische Lekythen", *AM* 94, 45-55.
Stewart, A., (1990). *Greek Sculpture*. New Haven: Yale University Press.
Stibbe, C.M., (1989). "Beobachtungen zur Topographie des antiken Sparta", *BABesch* 64, 93-96.
Sturgeon, M., (1987). *Isthmia IV: Sculpture I - 1952-67*. Princeton: American School of Classical Studies at Athens.
Sulze, H., (1936). "Das Dorische Kapitell der Burg von Tiryns", *AA*, 14-36.
Thallon-Hill, I. and King, L., (1929). "Decorated Architectural Terracottas", in *Corinth IV.1*. Princeton: American School of Classical Studies at Athens.
Themelis, P., (1969). "Ιερον Ποσειδωνος εις Ακοβιτικα Καλαματας", *AAA* 2, 352-357.
Themelis, P., (1965). "Καλαματα - Περα Καλαμιτσι", *ADelt* 20B2, 207.
Thompson, H., (1980). "The Tomb of Clytemnestra Revisited" in *From Athens to Gordion: The Papers of a Memorial Symposium for Rodney S. Young* (ed. by K. DeVries). Philadelphia: The University Museum, 3-15.
Tilton, E., (1902). "The Architecture of the Argive Heraeum - The Old Temple Platform and the Old Temple", in *The Argive Heraeum I* (ed. by C. Waldstein). Boston: Houghton, Mifflin, and Co., 110-111.

Tomlinson, R.A., (1992). "The Menelaion and Spartan Architecture", in Φιλολακων: *Lakonian Studies in Honour of Hector Catling* (ed. by J.M. Sanders). London: British School at Athens, 247-255.
Tomlinson, R.A., (1977). "The Upper Terraces at Perachora", *BSA* 72, 197-202.
Tomlinson, R.A., (1976). *Greek Sanctuaries*. London: Paul Elek.
Tomlinson, R.A., (1972). *Argos and the Argolid*. London: Routledge and Kegan Paul.
Touchais, G., (1984). "Chronique des Fouilles en 1983 - Tirynthe", *BCH* 108, 759.
Touchais, G., (1981). "Chronique des Fouilles en 1980 - Aigeira", *BCH* 105, 803.
Touchais, G., (1980a). "Chronique des Fouilles en 1979 - Aigeira", *BCH* 104, 614-617.
Touchais, G., (1980b). "Chronique des Fouilles en 1979 - Argos", *BCH* 104, 599.
Tsountas, C., (1886). "Ανασκαφαι Μυκηνων του 1886", *Praktika*, 59-61.
Valmin, M.N., (1938). *The Swedish Messenia Expedition*. Lund: C.W.K. Gleerup.
Valmin, M.N., (1930). *Études Topographiques sur la Messénie Ancienne*. Lund: Imprimerie Carl Blom.
Van Buren, E.D., (1926). *Greek Fictile Revetments in the Archaic Period*. London: John Murray.
Van Buren, E.D., (1923). *Archaic Fictile Revetments in Sicily and Magna Graecia*. London: John Murray.
Verdelis, N., (1962a). "A Sanctuary at Solygeia", *Archaeology* 15, 184-192
Verdelis, N., (1962b). "Ανασκαφη Μυκηνων", *Praktika*, 85-87.
Verdelis, N., (1958). "Σολυγεια", *Praktika*, 135-145.
Versakis, Ph., (1916). "Το ιερον του Κορυνθου Απολλωνος," *ADelt* 2, 65-118.
Vollgraff, W., (1956). *Le Sanctuaire d'Apollon Pythéen à Argos*. Paris: Librairie Philosophique J. Vrin.
Vollgraff, W., (1920). "Fouilles d'Argos (1912)", *BCH* 44, 219-226.
Vollgraff, W., (1907). "Fouilles d'Argos - La topographie de la ville hellénique", *BCH* 31, 139-184.
Von Gerkan, A., (1948-9). "Die Herkunft des Dorischen Gebälks", *JdI* 63-4, 1-13.
Voyatzis, M., (1990). *The Early Sanctuary of Athena Alea at Tegea and Other Archaic Sanctuaries in Arcadia*. Göteborg: Paul Åströms förlag.
W.-G., V., (1930). "Notice of Books: *The Sanctuary of Artemis Orthia*", *JHS* 50, 146-150.
Wace, A.J.B., (1949). *Mycenae: an Archaeological History and Guide*. Princeton: Princeton University Press, 84-85.
Wace, A.J.B., (1939). "Mycenae", *JHS* 59, 210-212.
Wace, A.J.B., (1921-3). "Mycenae: The Palace - The Construction and Date of the Megaron", *BSA* 25, 245.
Wace, A.J.B. and Hasluck, F.W., (1907-8). "South-Eastern Laconia", *BSA* 14, 162 and 165.
Wace, A.J.B., Thompson, M.S., and Droop, J.P., (1908-9). "Excavations at Sparta, 1909: The Menelaion", *BSA* 15, 108-113.
Walter, O., (1915). "Vorläufiger Bericht über die Grabungen in Elis 1914", *ÖJh* 18, 61-63.
Walter, O., (1913). "Vorläufiger Bericht über die Grabungen in Elis 1911-12", *ÖJh* 16, 145-150.
Washburn, O., (1919). "The Origin of the Triglyph Frieze", *AJA* 23, 33-49.

Washburn, O., (1918). "Iphigenia Taurica 113 as a Document in the History of Architecture", *AJA* 22, 434-437.

Waywell, G.B. and Wilkes, J.J., (1994). "Excavations at Sparta: The Roman Stoa, 1988-91, Part 2", *BSA* 89, 379-384.

Weickert, C., (1929). *Typen der Archaischen Architektur in Griechenland und Kleinasien*. Augsburg: Dr. Benno Filser Verlag.

Weinberg, S., (1939a). "Excavations at Corinth, 1938-9", *AJA* 43, 595.

Weinberg, S., (1939b). "On the Date of the Temple of Apollo at Corinth", *Hesperia* 8, 191-199.

Wells, B., (1990). "The Asine Sima", *Hesperia* 59, 157-161.

Welter, G., (1941). *Troizen und Kalaureia*. Berlin: Verlag Gebr. Mann.

Wesenberg, B., (1971). *Kapitelle und Basen: Beobachtungen zur Entstehung der griechischen Säulenformen*. Düsseldorf: Rheinland Verlag.

White, D., (1965). "The Hera Temple at Olympia: Some Questions Concerning its Wooden Construction", *AJA* 69, 178.

Wikander, Ö., (1990). "Archaic Roof Tiles: The First Generation", *Hesperia* 59, 285-290.

Wikander, Ö., (1988). "Ancient Roof Tiles: Use and Function", *OpAth* 17, 203-216.

Williams, C.K., (1986). "Corinth and the Cult of Aphrodite", in *Corinthiaca: Studies in Honor of D.A. Amyx* (ed. by M.A. Del Chiaro). Columbia, MO: University of Missouri Press, 12-24.

Williams, C.K., (1984). "Doric Architecture and Early Capitals in Corinth", *AM* 99, 67-75.

Williams, C.K., (1980). "Demaratus and Early Corinthian Roofs", in Στήλη: Τομος εις Μνημην Νικολαου Κοντολεοντος. Athens: Σωματειο οι Φιλοι του Νικολαου Κοντολεοντος, 345-350.

Williams, C.K., (1965). "Nemea", *ADelt* 20B1, 154-156.

Winter, F., (1982). "Tradition in Doric Design IV: the Fourth Century", *AJA* 86, 390-391.

Winter, N.A., (1993). *Greek Architectural Terracottas from the Prehistoric to the end of the Archaic period*. Oxford: Clarendon Press.

Winter, N.A., (1990). "Defining Regional Styles in Archaic Greek Architectural Terracottas", *Hesperia* 59, 13-32.

Wiseman, J., (1969). "Excavations in Corinth: the Gymnasium Area, 1967-68", *Hesperia* 99, 99.

Woodward, A.M., (1928-9, 1929-30). "Excavations at Sparta, 1924-28", *BSA* 30, 160.

Woodward, A.M., (1927-8). "Excavations at Sparta, 1924-28", *BSA* 29, 75.

Woodward, A.M., (1926-7). "Excavations at Sparta, 1927: The Acropolis", *BSA* 28, 37-45.

Woodward, A.M., and Hobling, M.B., (1923-4; 1924-5). "Excavations at Sparta, 1924-5: The Acropolis", *BSA* 26, 240-252.

Wright, J., (1982). "The Old Temple Terrace at the Argive Heraeum and the Early Cult of Hera in the Argolid", *JHS* 102, 186-201.

Wright, J., (1980). "The Older Terrace at the Argive Heraeum and Early Cults in the Argolid", in *Abstracts of Papers from the 81st Annual Meeting of the American Institute of Archaeology, December 1979* in *AJA* 84, 241-242.

Yalouris, N., (1979). "Problems Relating to the Temple of Apollo Epikourios at Bassai", in *Greece and Italy in the Classical World: Acta of the XI International Congress of Classical Archaeology, London, 3-9 September, 1978* (ed. by J.M. Coldstream and M.A.R. Colledge). London: G.A. Pindar and Sons Ltd, 89-104.

Yalouris, N., (1973). "Ανασκαφαι εις τον εν Βασσαις Φιγαλειας Ναον του Επικουριου Απολλωνος", *AAA* 6, 39-55.

Yalouris, N., (1972). "Das Akroter des Heraions in Olympia", *AM* 87, 85-98.

Yalouris, N., (1971). "Κλασσικος Ναος Λεπρεου", *AAA* 4, 245-251.

Yalouris, N., (1967-8). "Το ακρωτηριον του Ηραιου Ολυμπιας", in Χαριστηριον εις Α.Κ. Ορλανδον 4. Athens: Βιβλιοθηκη της εν Αθηναις Αρχαιολογικης Εταιρειας Αριθ., 57-65, pls. 8-12.

Yalouris, N., (1965). "Δοκιμαστικη Ανασκαφη εις τον Ναον του Επικουριου Απολλωνος Βασσων 1959", *Praktika*, 155-159.

Yalouris, N., (1960). "Φιγαλεια. Βασσαι 1959", *Ergon*, 106-109.

Young, H., (1980). *Building Projects and Archaic Greek Tyrants*. University of Pennsylvania: PhD dissertation.

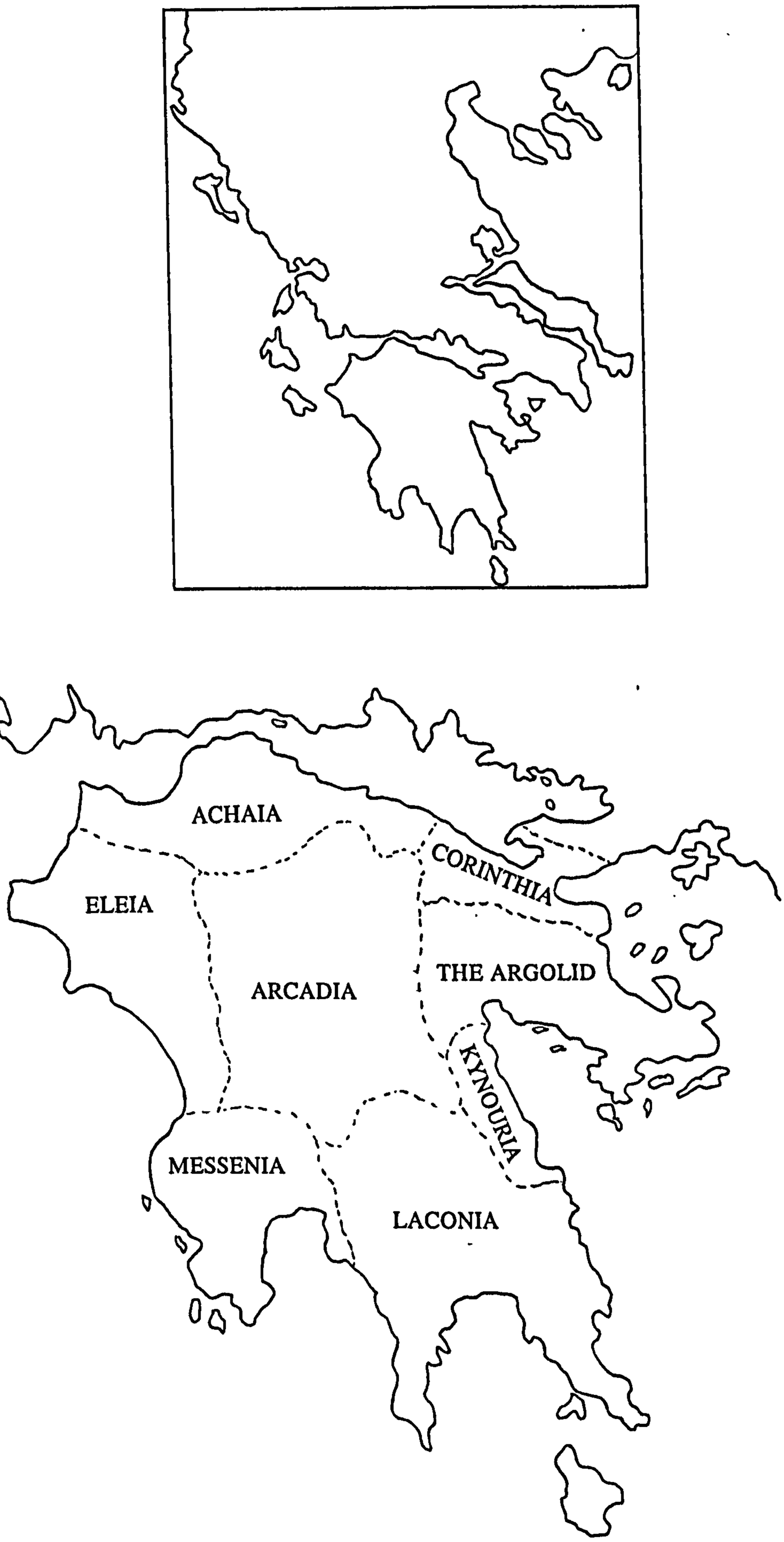


Figure 1 - Map of the Peloponnese.

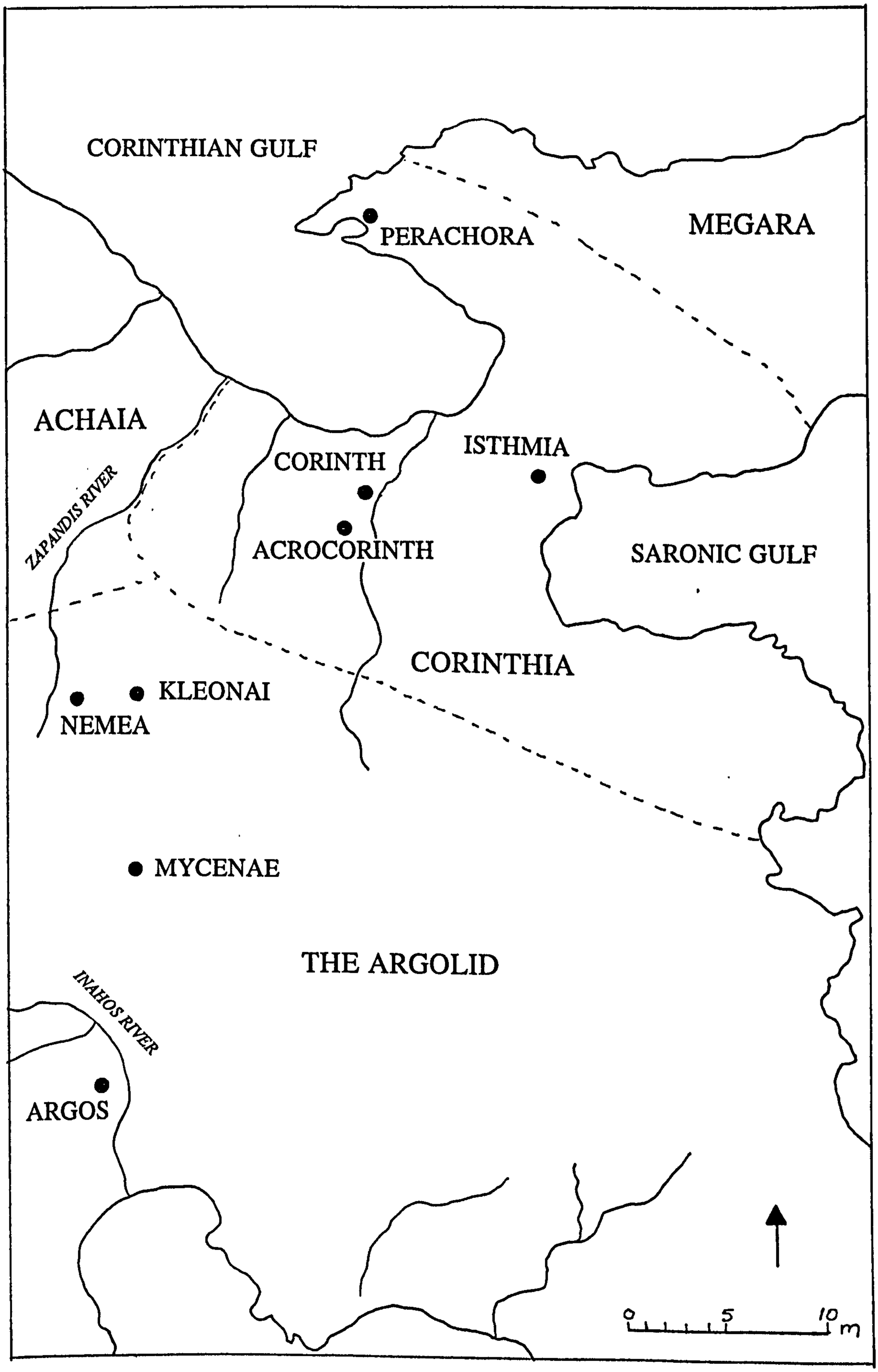
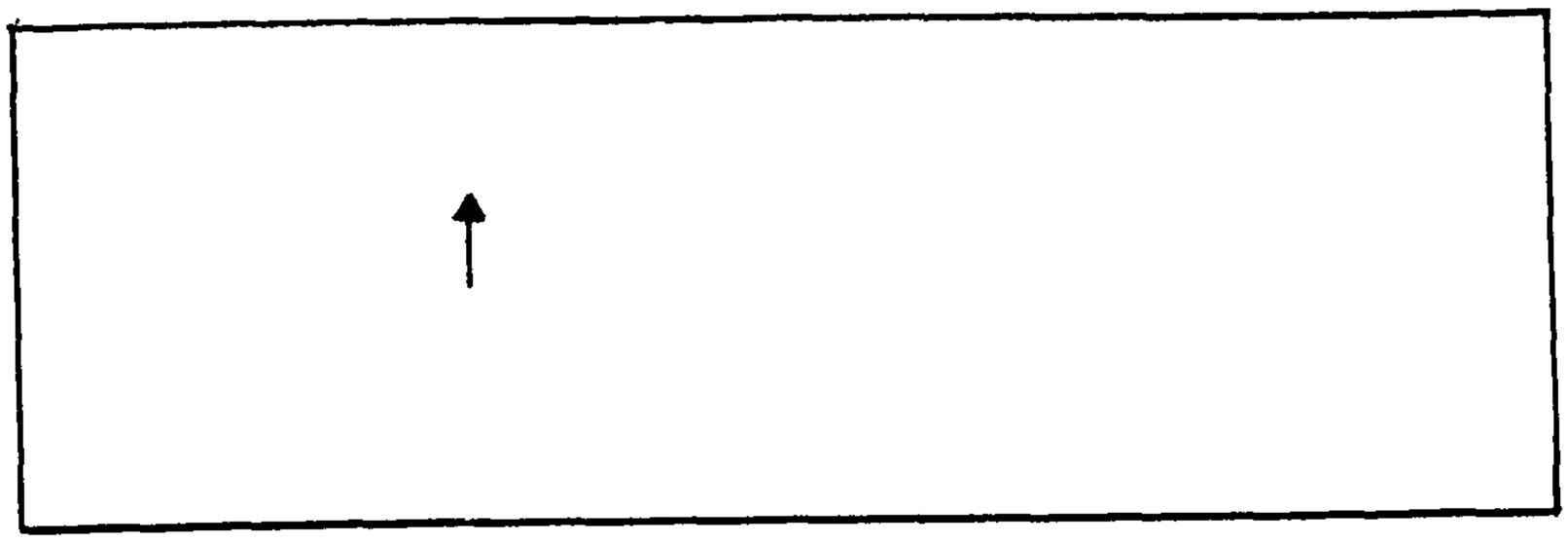
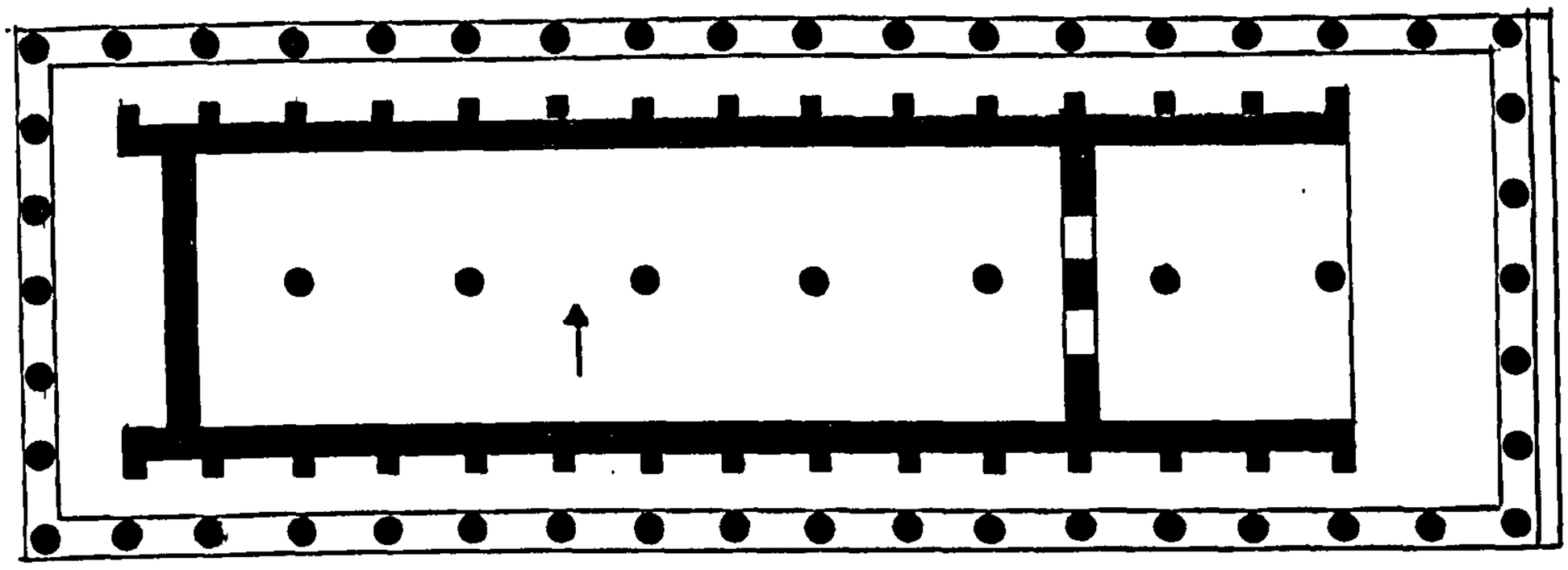


Figure 2 - Map of Corinthia.



a. Corinth. Early Archaic temple of Apollo.



b. Isthmia. Early Archaic temple of Poseidon.

Figure 3 - Restored plans of Early Archaic temples in Corinthia.

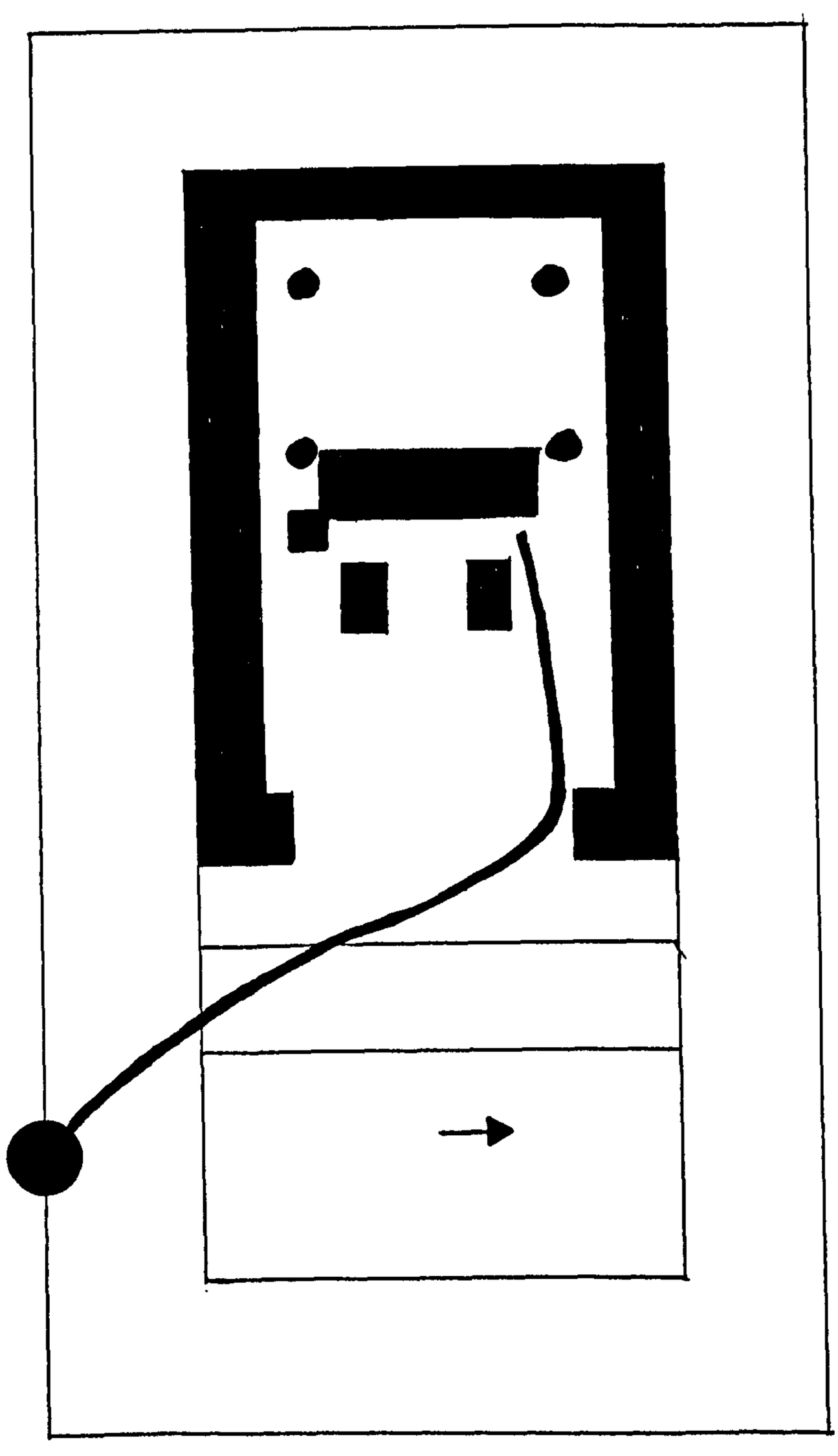
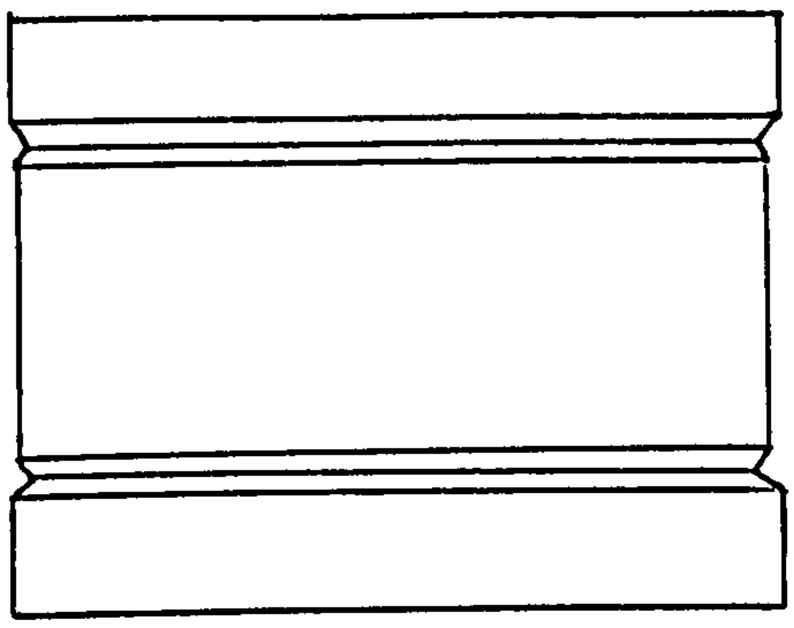
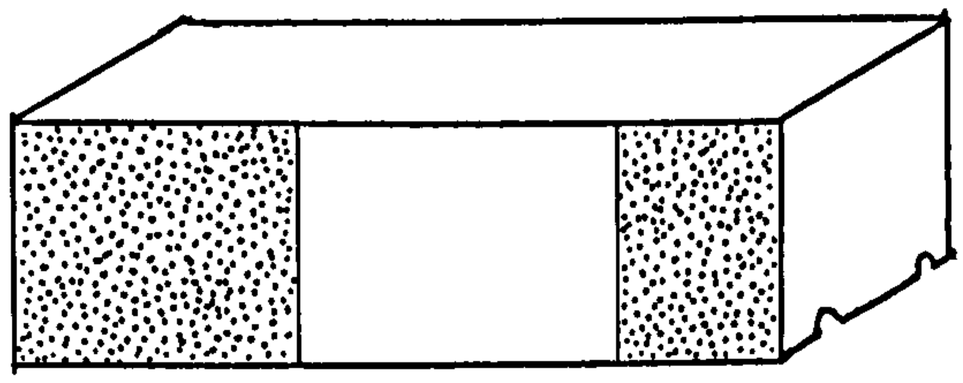


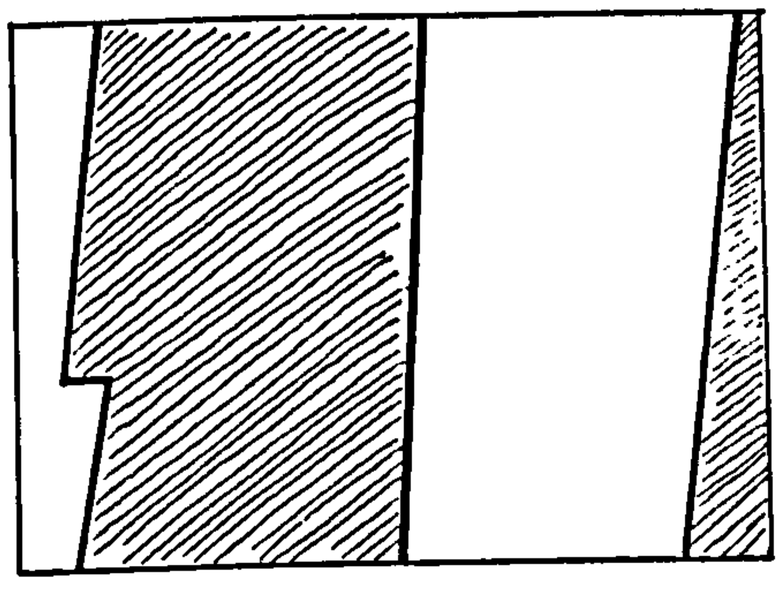
Figure 4 - The Asklepieion at Corinth. Restored plan of the Archaic temple of Apollo lying within the cuttings for the Hellenistic temple.



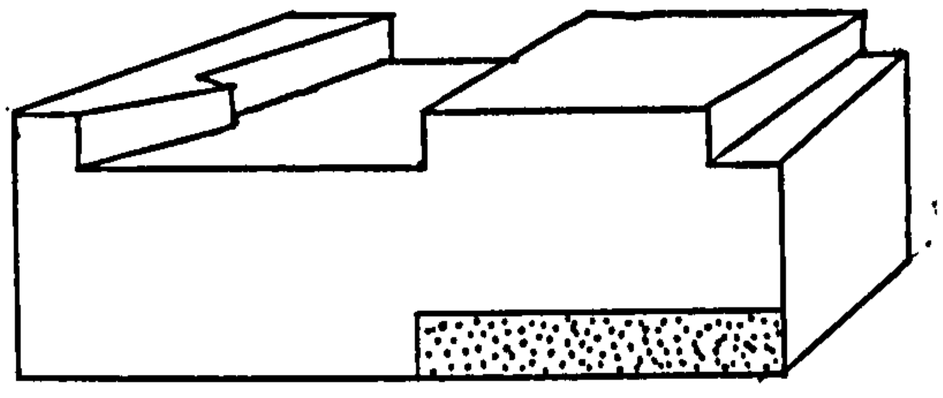
a. Underside of a regular wall block with rope grooves.



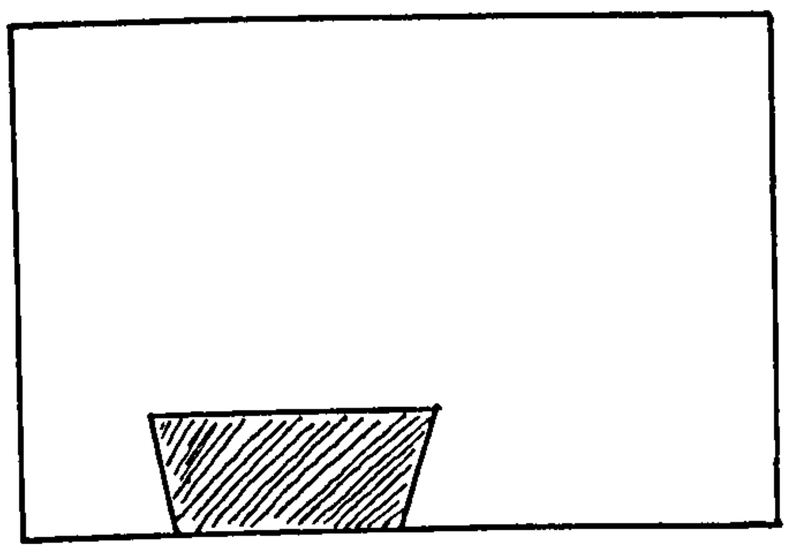
b. Axonometric view of a wall block with an undamaged vertical band flanked by damaged plaster.



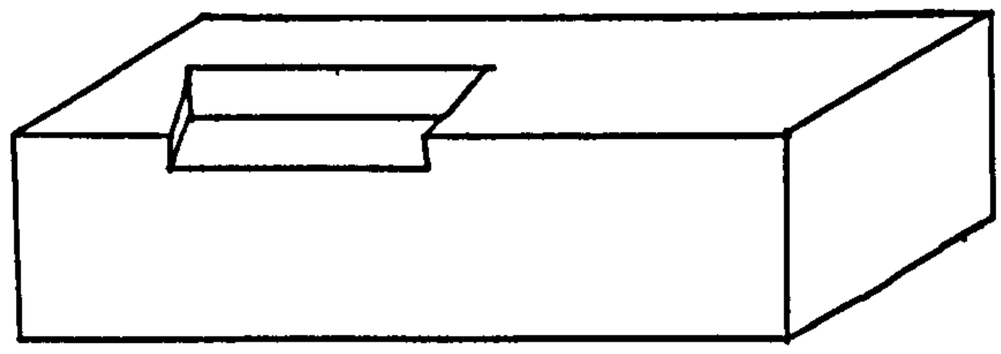
c. Topside of Broneer's group 6 wall blocks with cuttings for timbers.



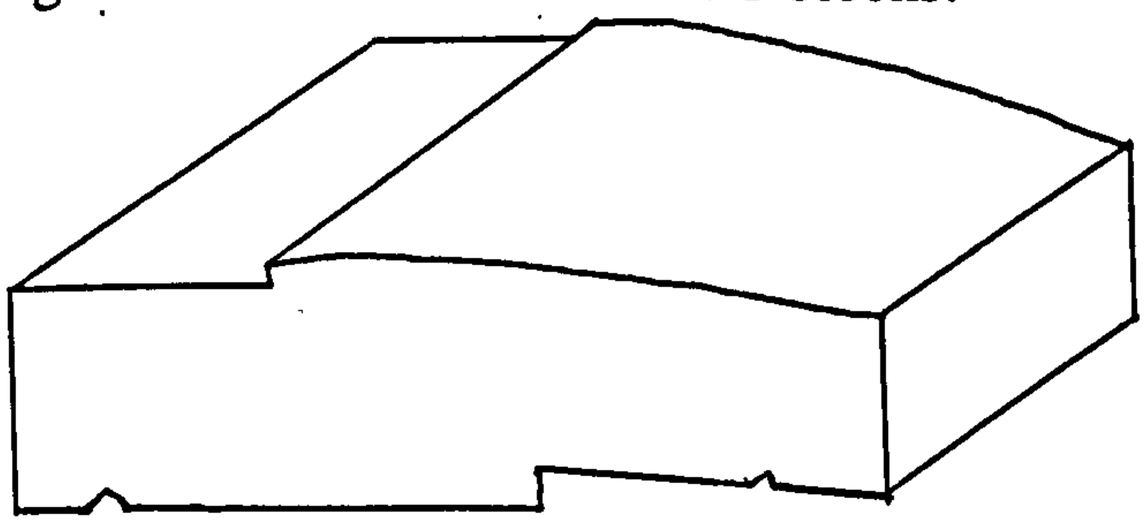
d. Axonometric view of Broneer's group 6 blocks.



e. Topside of Broneer's groups 7 and 8 blocks with a cutting for timber.



f. Axonometric view of Broneer's group 7 and 8 blocks.



g. Cornice block (Broneer's group 10 blocks).

Figure 5 - Isthmia. Early Archaic temple of Poseidon. Ashlar blocks.

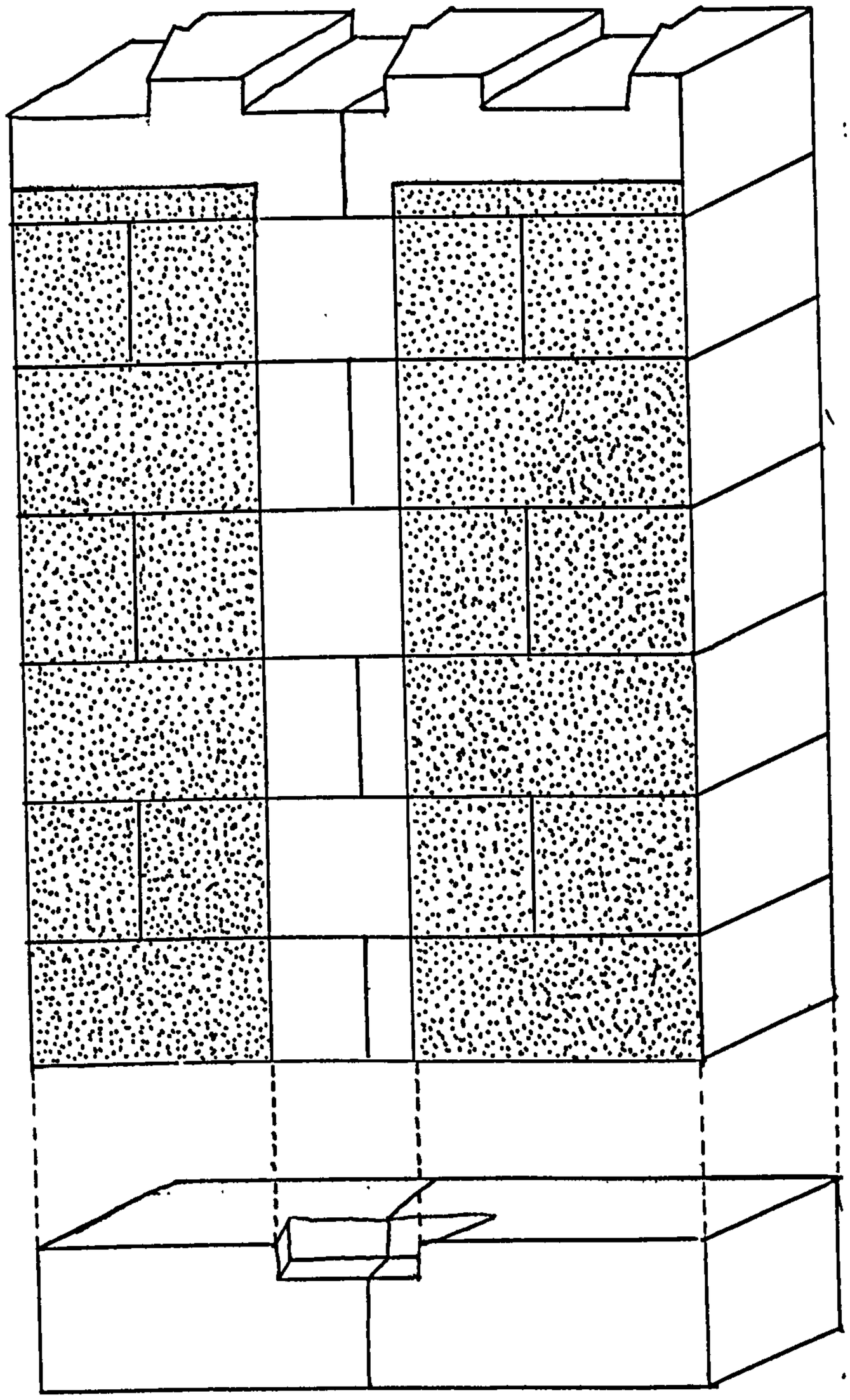
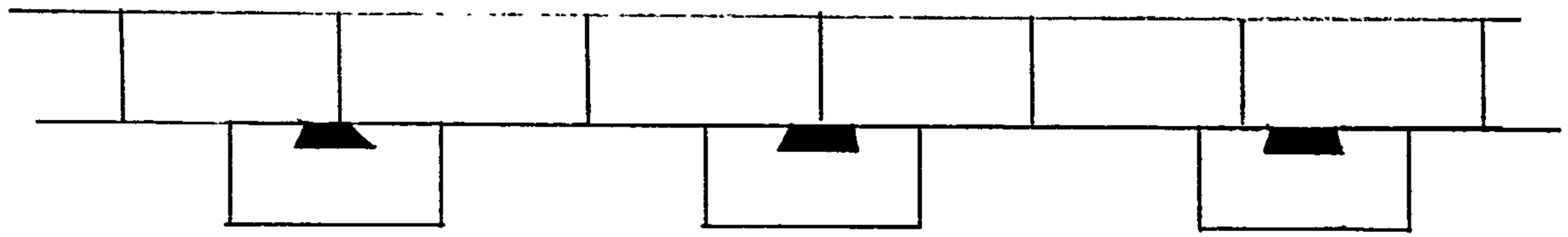
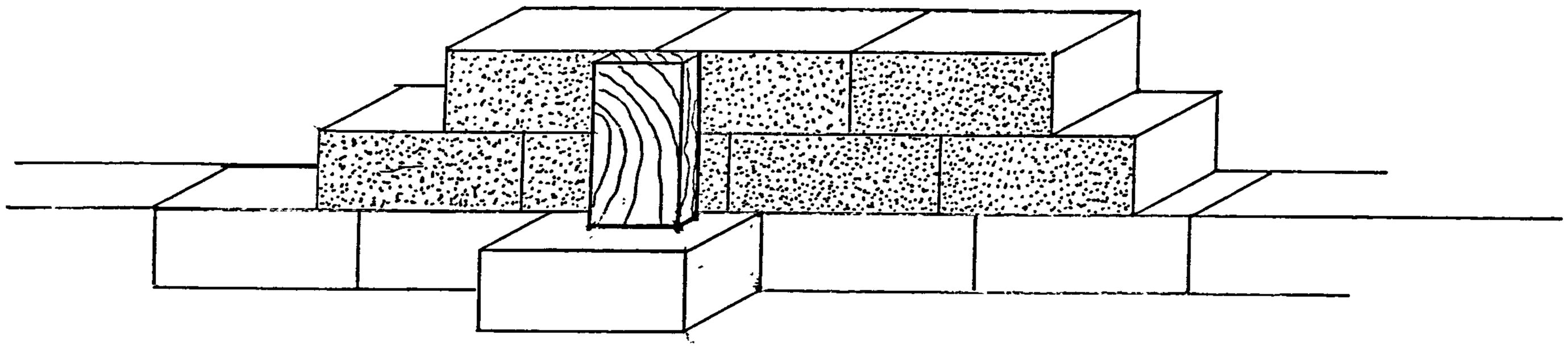


Figure 6 - Isthmia. Early Archaic temple of Poseidon. Restoration of interior cella wall by Rhodes (1984) fig. 23.



a. Plan of cella wall and piers.



b. Axial view of wall foundations, lower wall blocks, and pier blocks with vertical wooden planks.

Figure 7 - Isthmia. Early Archaic temple of Poseidon. Author's reconstruction of exterior cella wall with Broneer's group 7 and 8 blocks in the pier trenches.

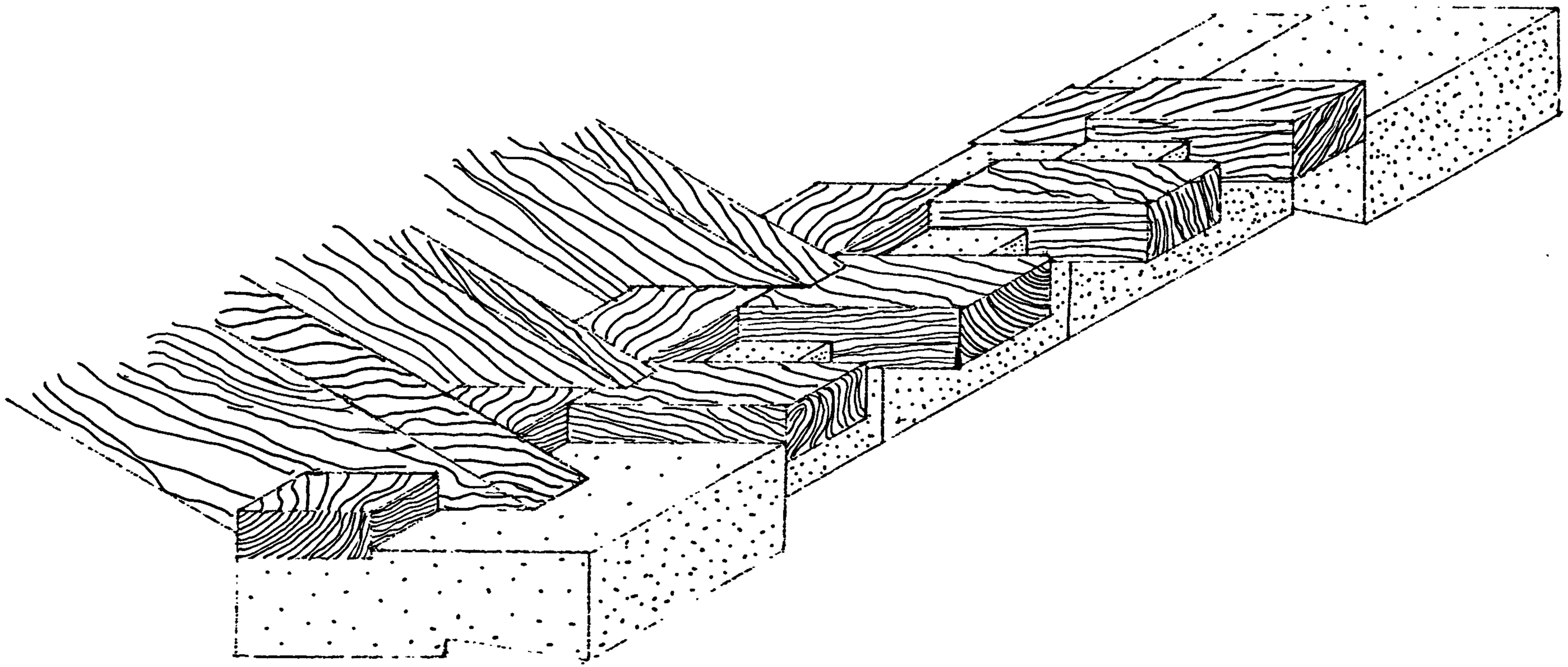


Figure 8 - Isthmia. Early Archaic temple of Poseidon. Reconstruction of top course of wall by Rhodes (1984) fig. 24. It shows a series of Broneer's group 6 blocks between two cornice blocks (Broneer's group 10 blocks) and his interpretation of how the associated woodwork and roof beams were set.

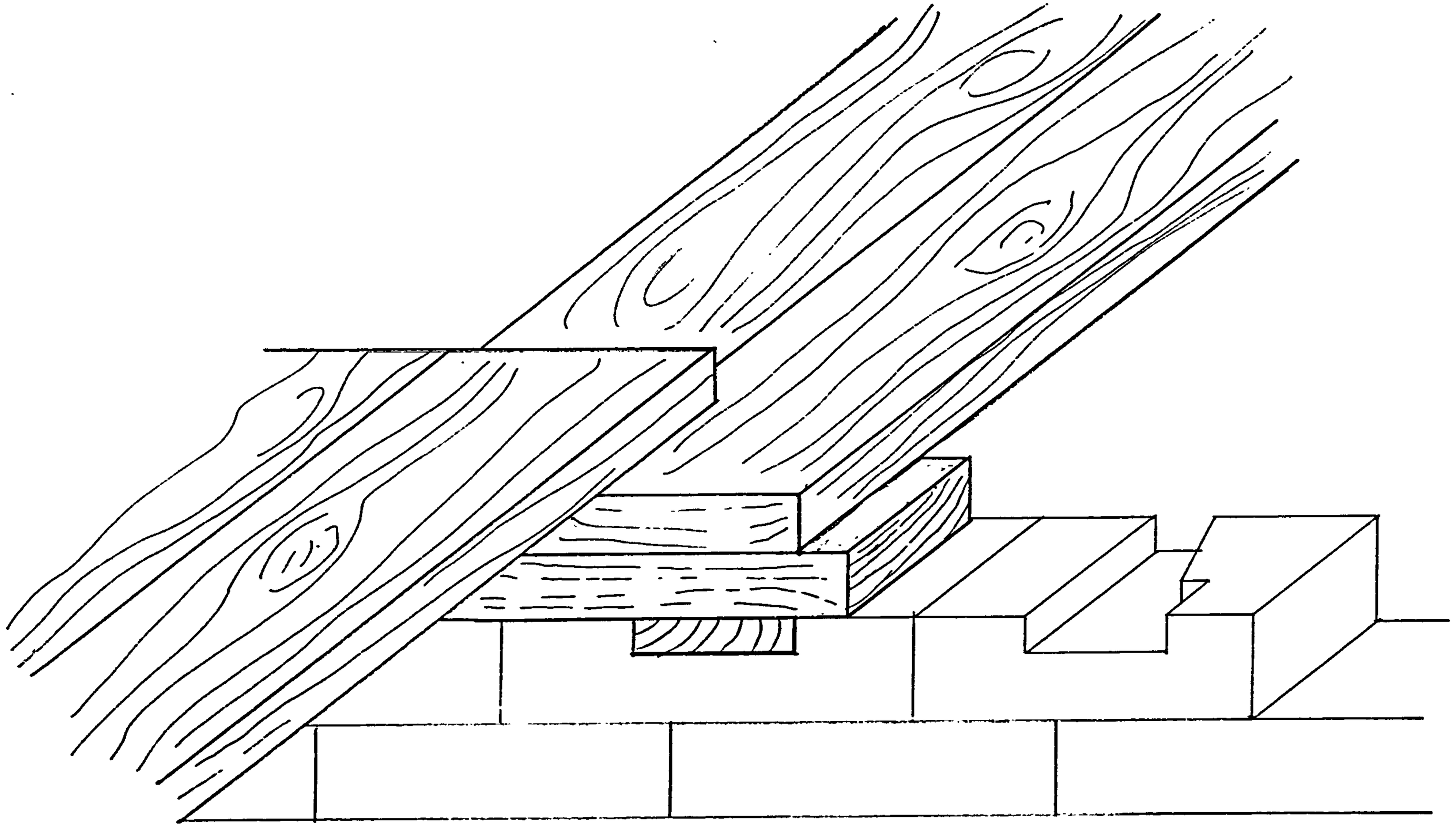
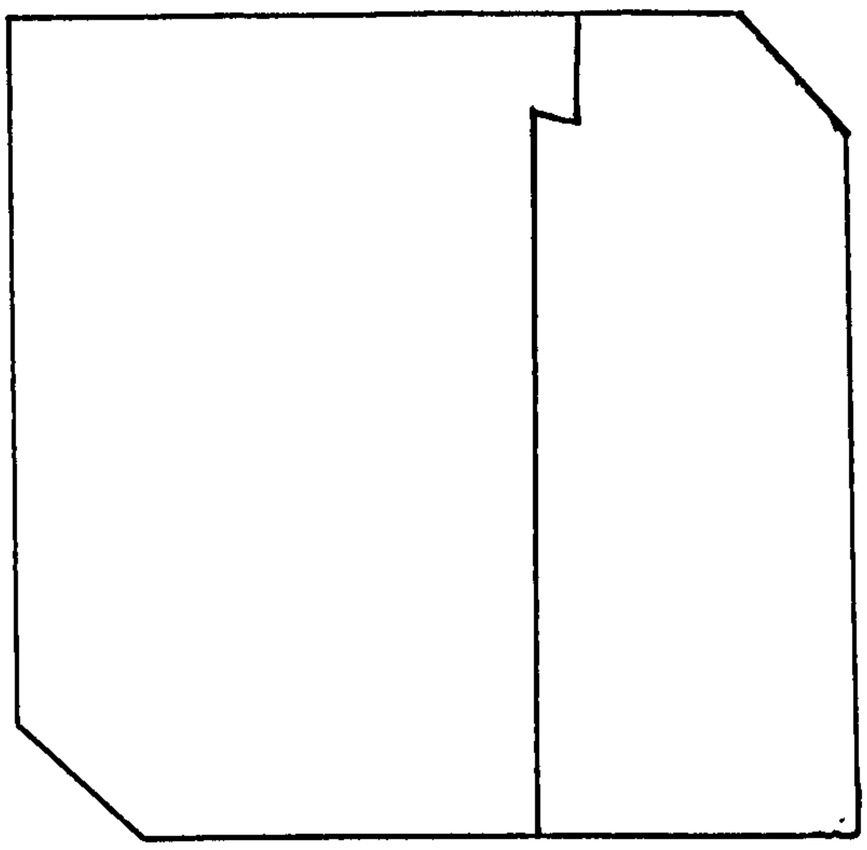
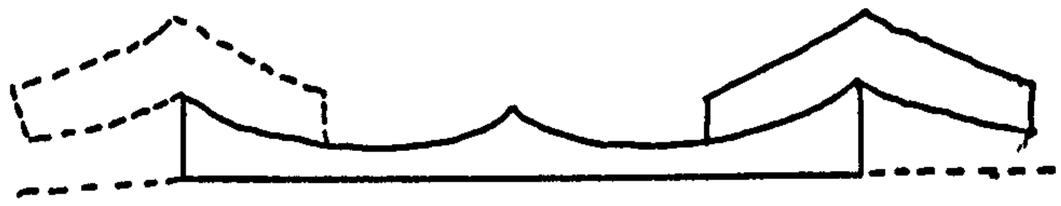


Figure 9 - Isthmia. Early Archaic temple of Poseidon. Restoration of the top course of the cella wall by the author. It shows how Broneer's group 6 blocks could have been used to smooth the transition from stone to wood by putting wooden blocks in the cuttings which then could be attached to the woodwork for the ceilings of both the cella and the pteron.

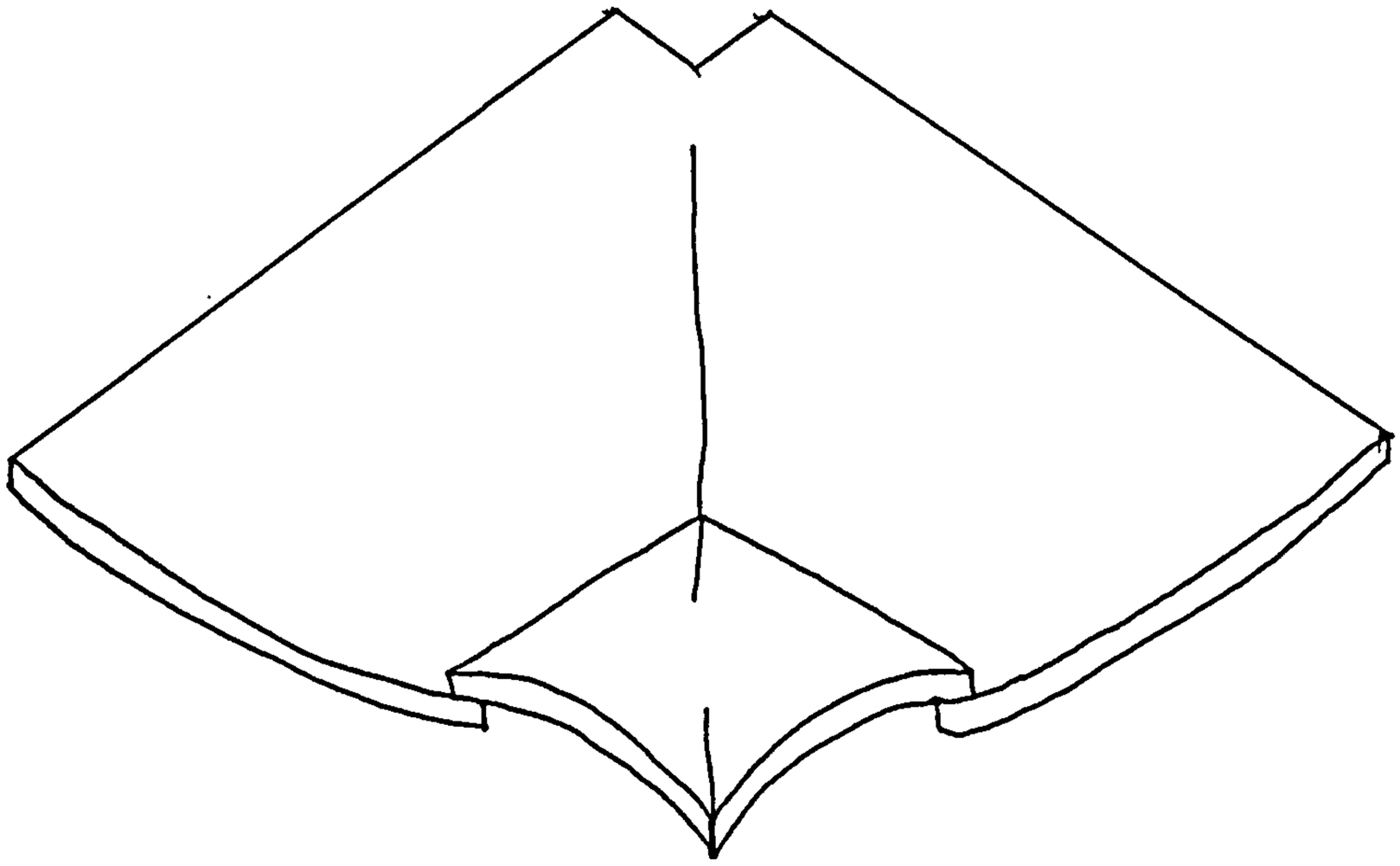


a. Topside of a regular pan/cover tile.

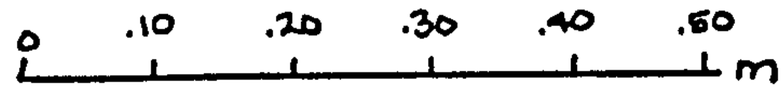
b. Profile of a regular pan/cover tile.

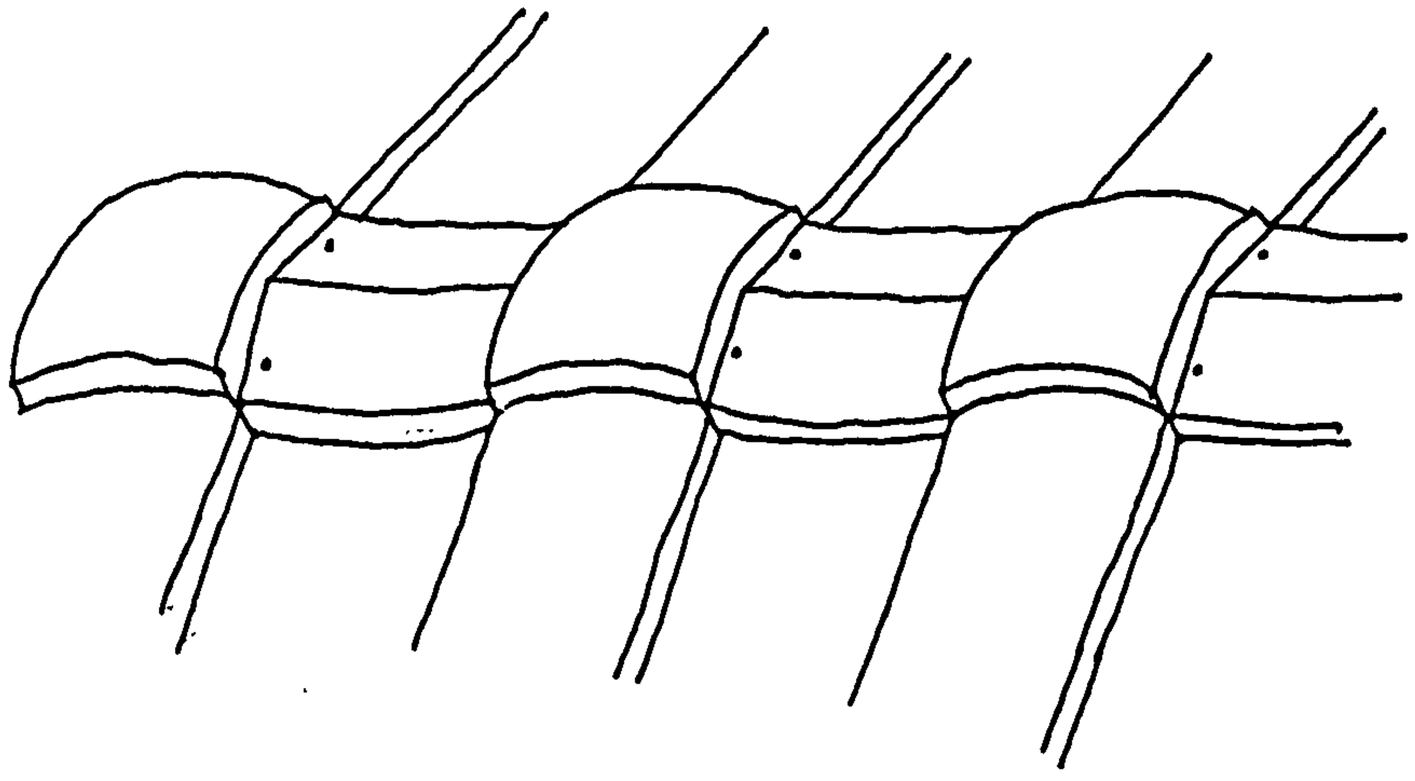


c. Profile of an eaves tile.



d. Axial view of a hip tile.





e. View of the ridge with combination ridge tiles secured by nails.

Figure 10 - Protocorinthian roof tiles.

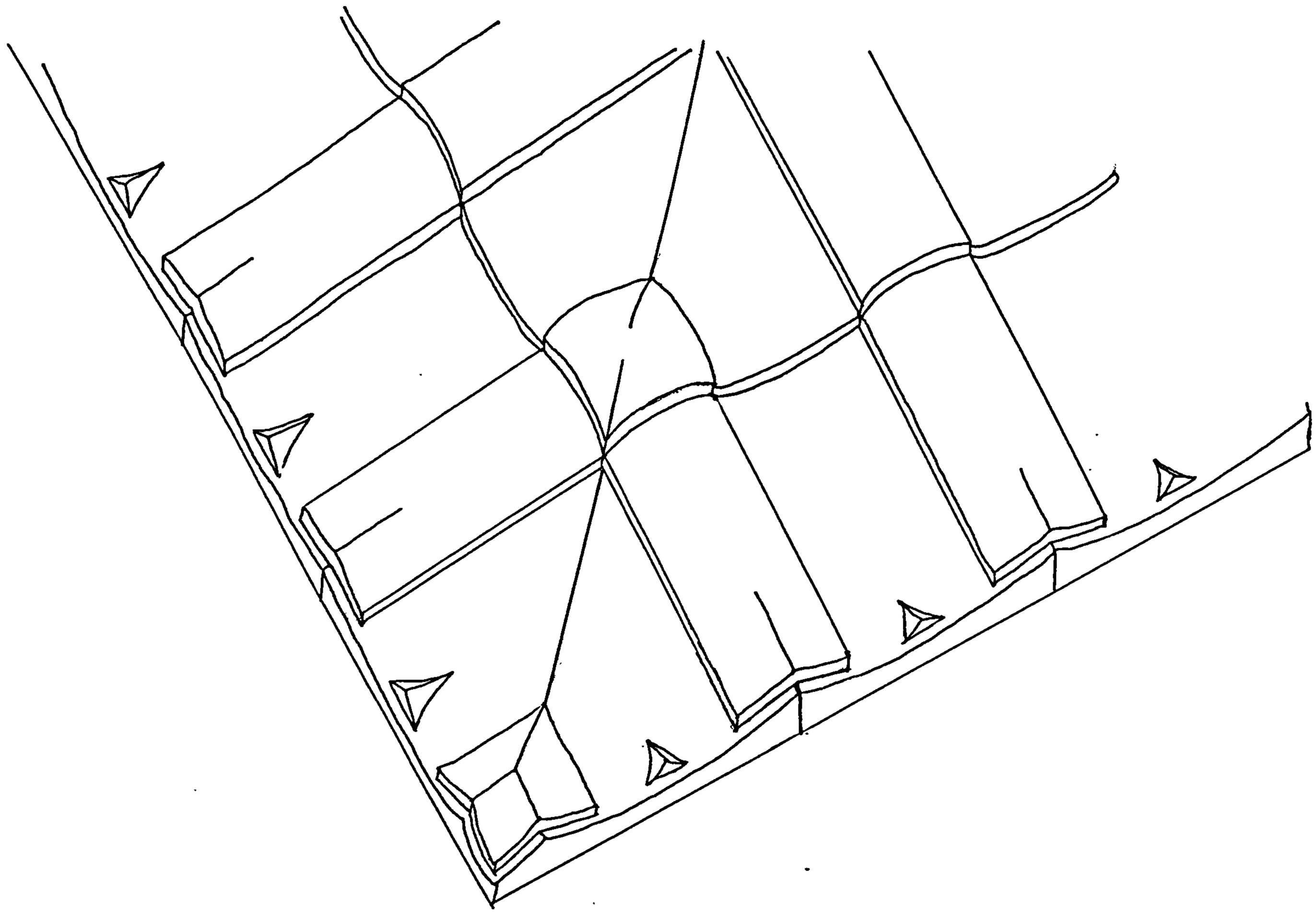


Figure 11 - Isthmia. Early Archaic temple of Poseidon. Restoration of the Protocorinthian roof at a corner showing a hip/eaves tile, eaves tiles with the triangular projection, and hips tile.

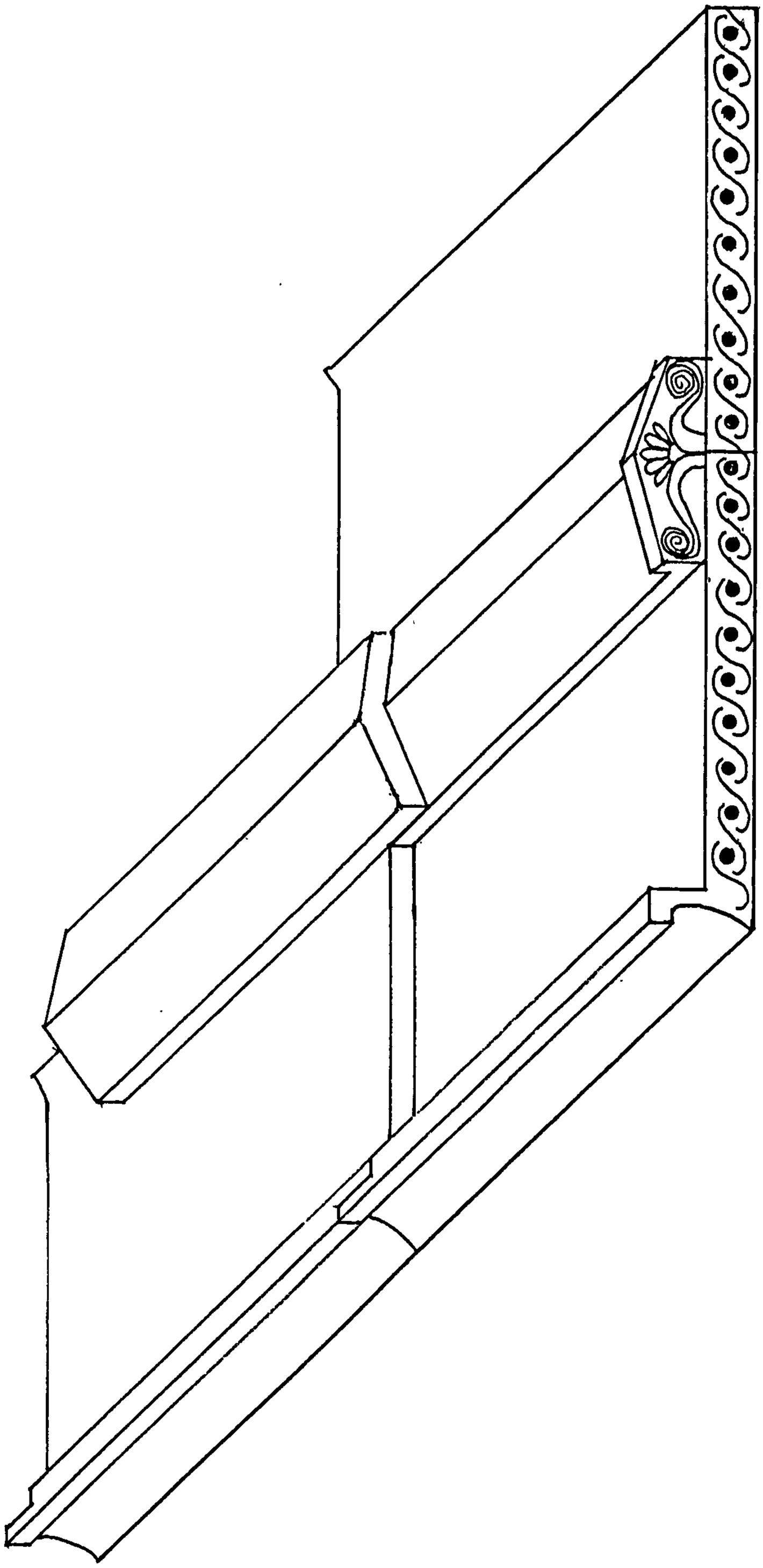


Figure 12 - Typical Corinthian-style roof. Restoration of raking and flanking simas, antefixes, and regular pan and cover tiles.

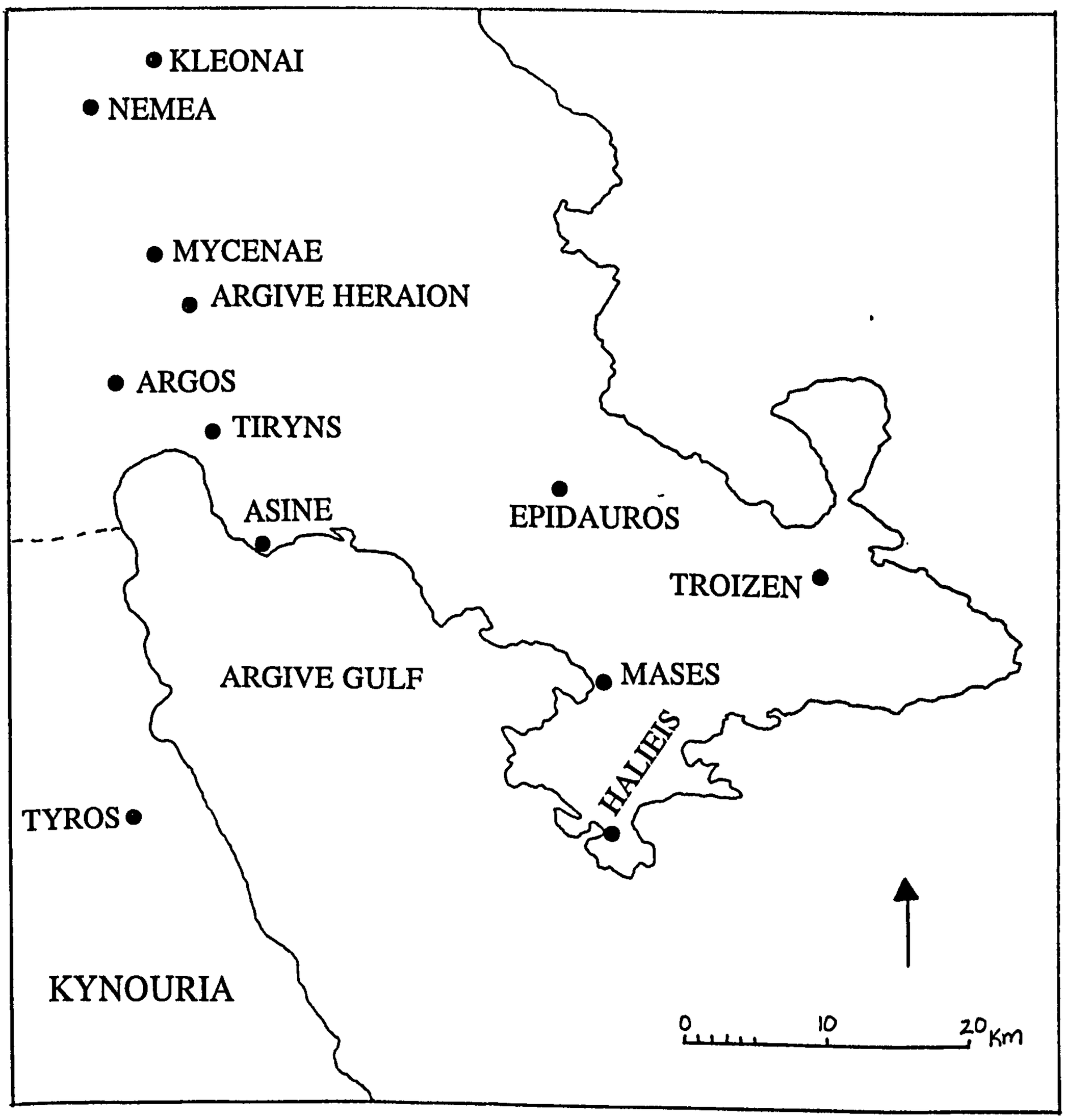


Figure 13 - Map of the Argolid.

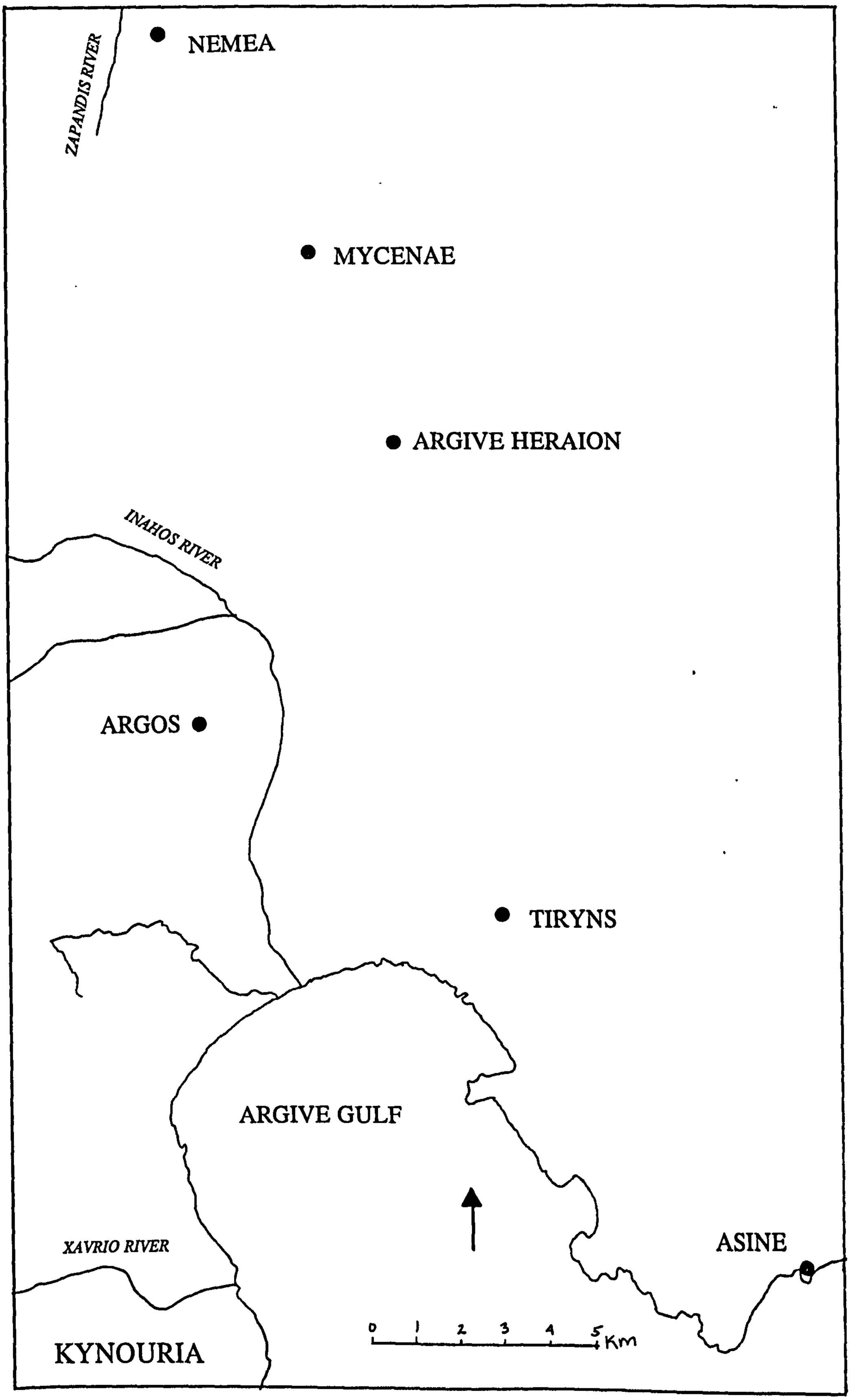
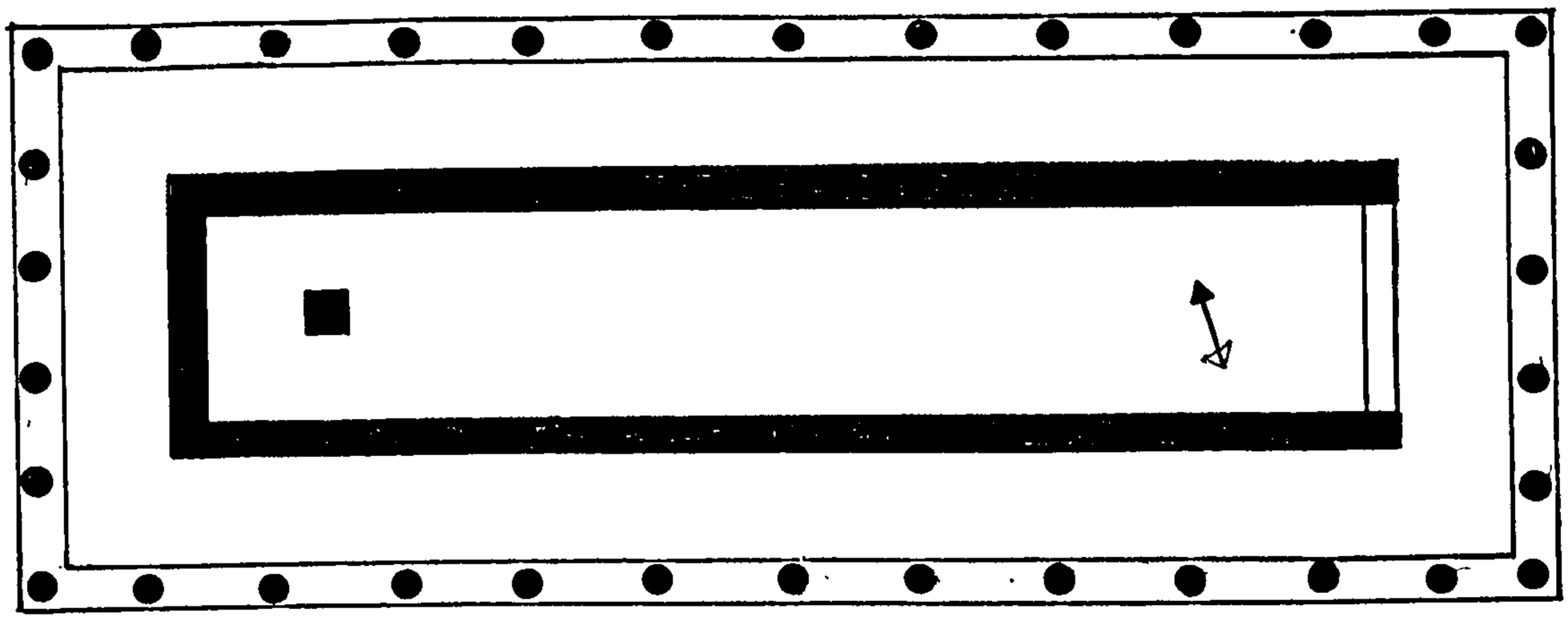
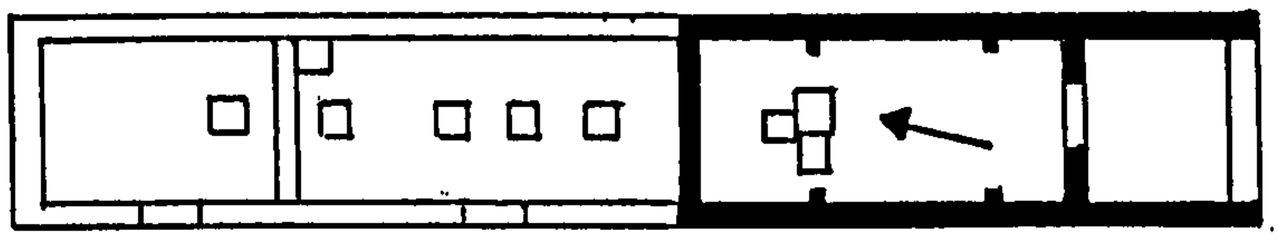


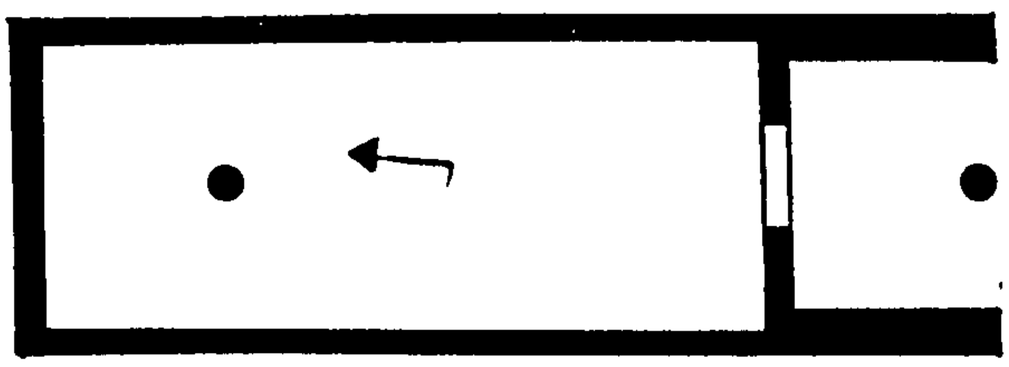
Figure 14 - Map of the Argive plain.



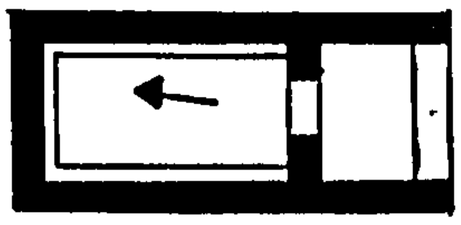
a. Argive Heraion. Early Archaic temple of Hera.



b. Halieis. Early Archaic temple of Apollo. The two subsidiary rooms behind the naos are shown in outline.



c. Tiryns. Early Archaic temple of Athena or Hera.



d. Asine. Early Archaic temple of Apollo Pythaios.

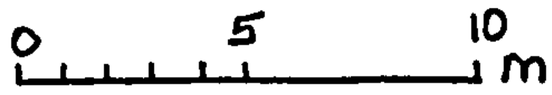
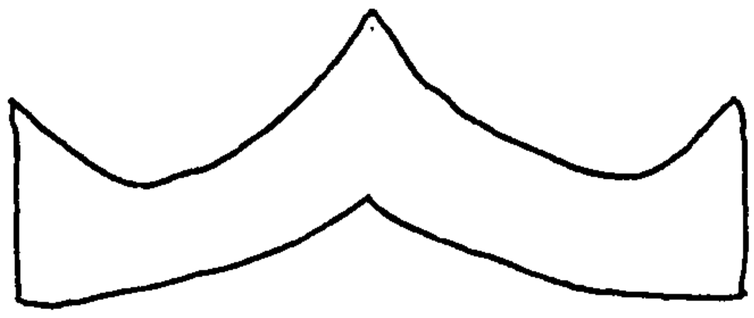
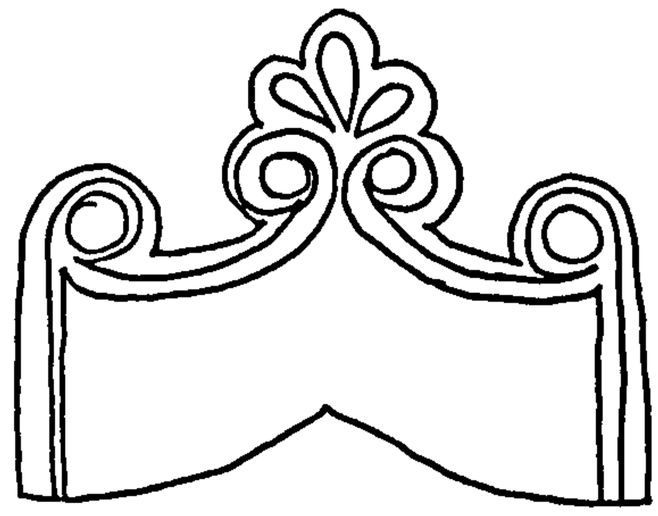


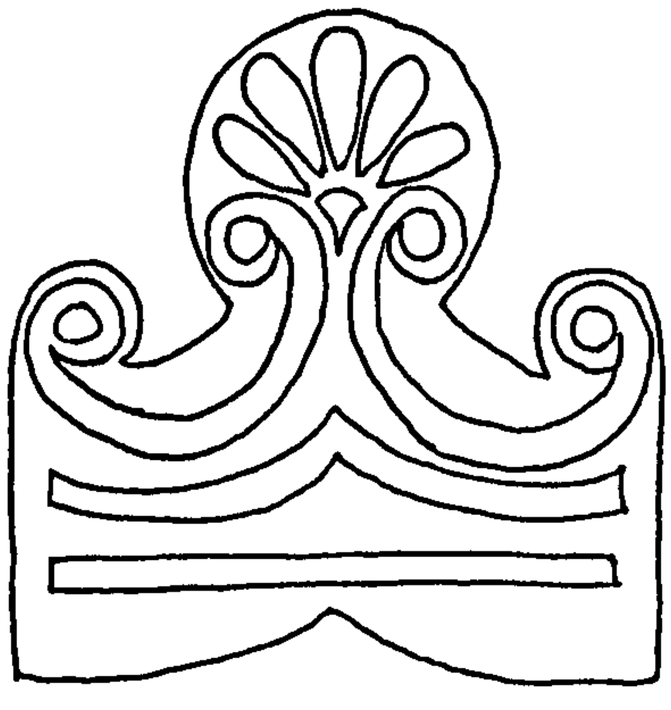
Figure 15 - Restored plans of the Early Archaic temples of the Argolid.



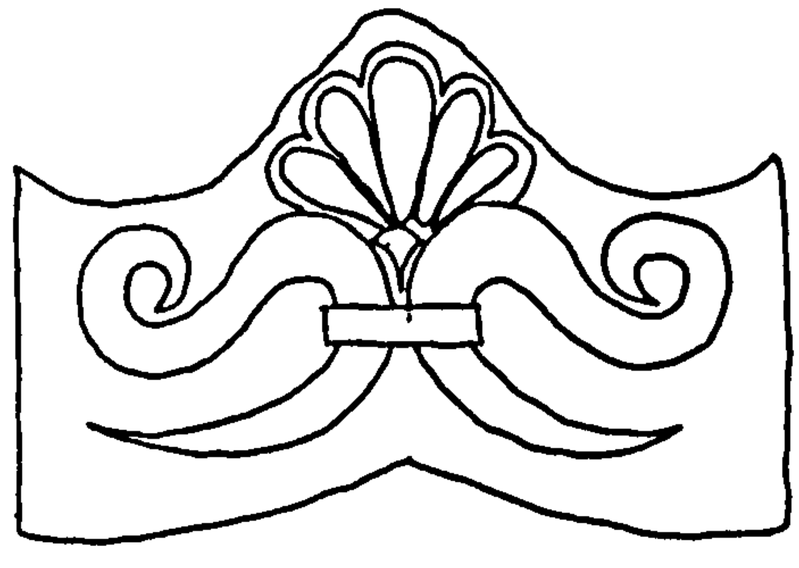
a. undecorated three-peaked antefixes.
c. 660-570 BC.



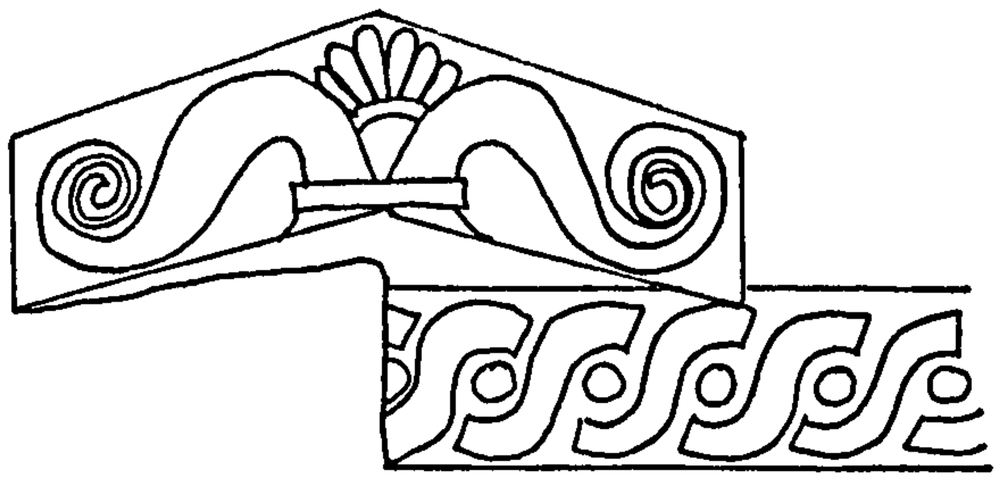
b. stamped three-peaked antefixes
c. 600-560 BC.



c. stamped three-peaked antefixes.
c. 560-540 BC.



d. moulded three-peaked antefixes.
c. 550-500 BC.



e. pentagonal antefixes.
c. 600-560 BC.

Figure 16 - Antefixes from the Argolid.

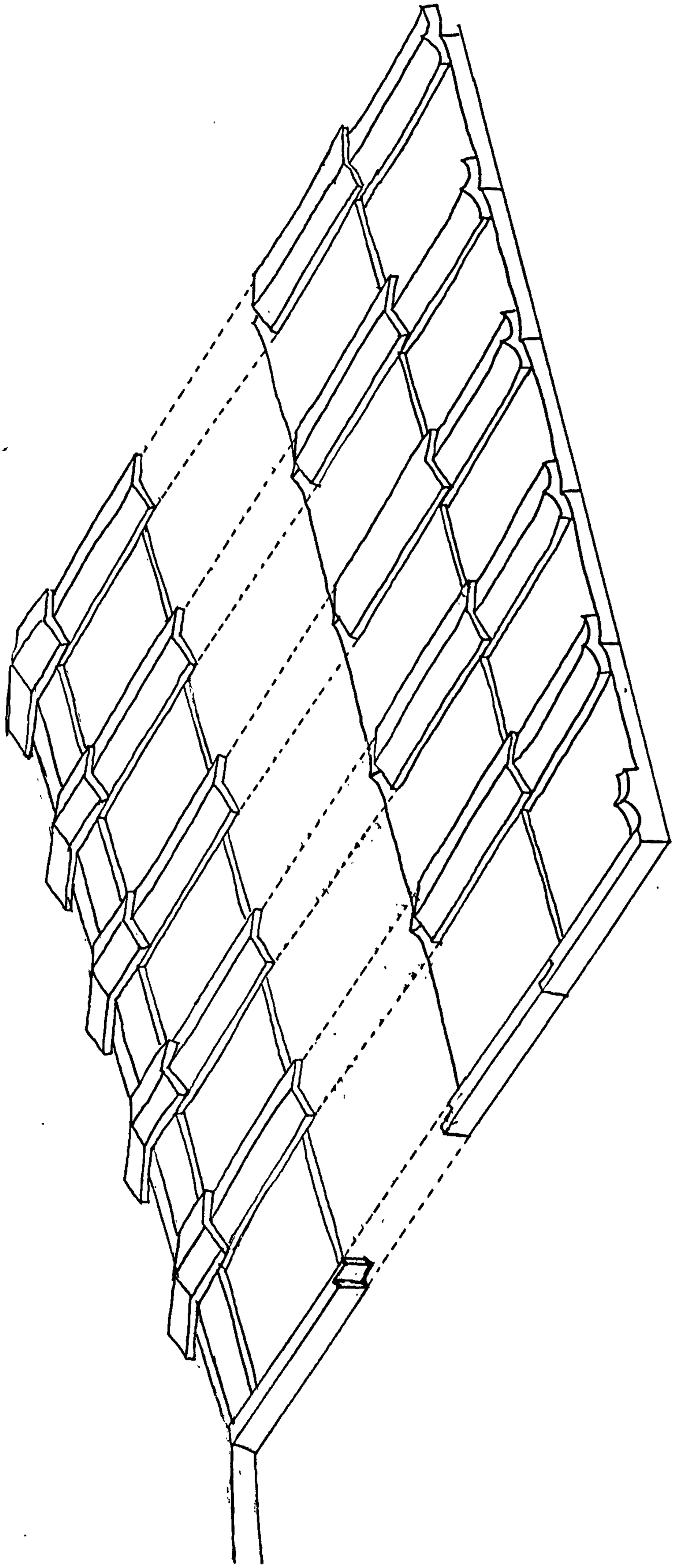


Figure 17 - Restoration of a typical Argive roof.

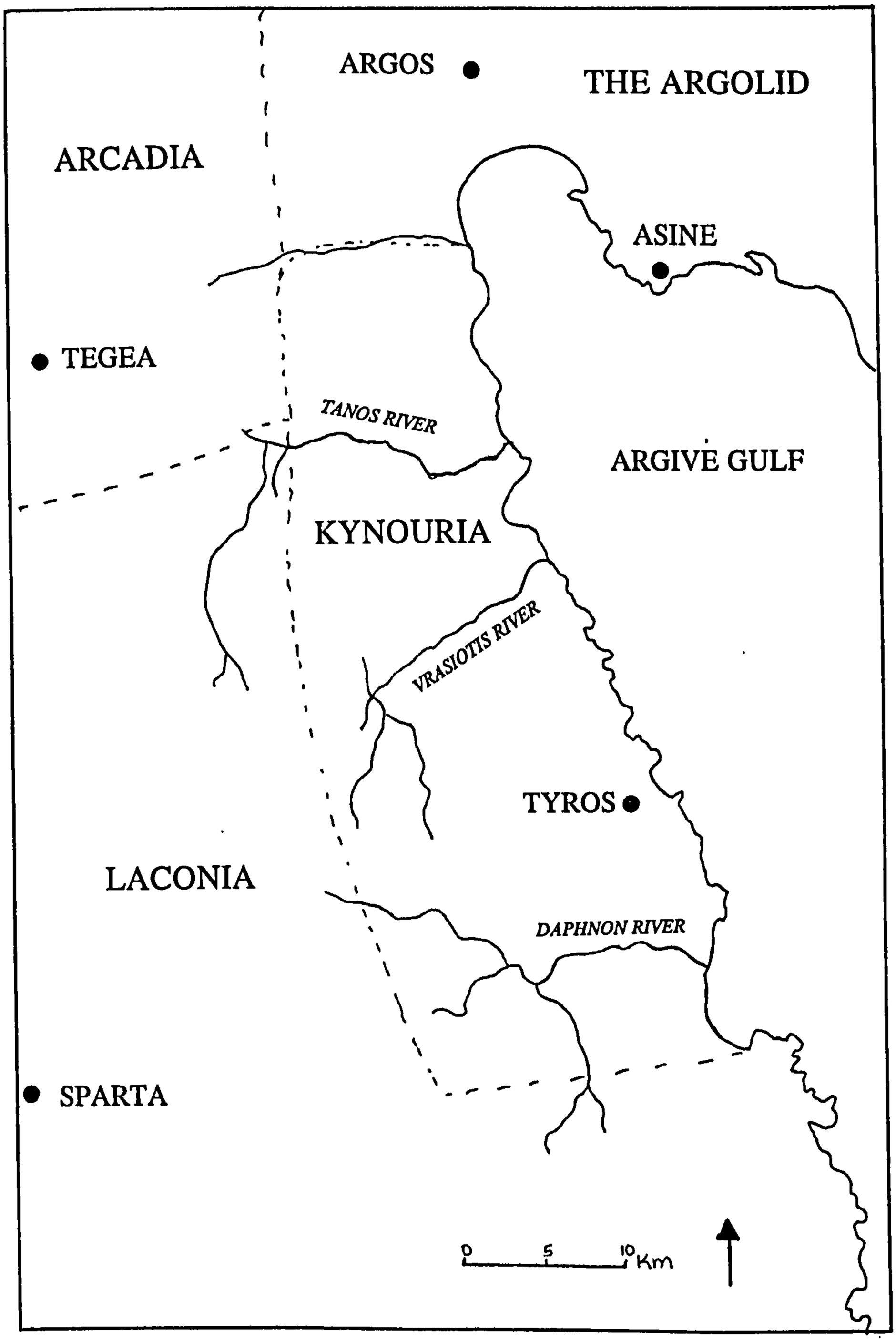


Figure 18 - Map of Kynouria.

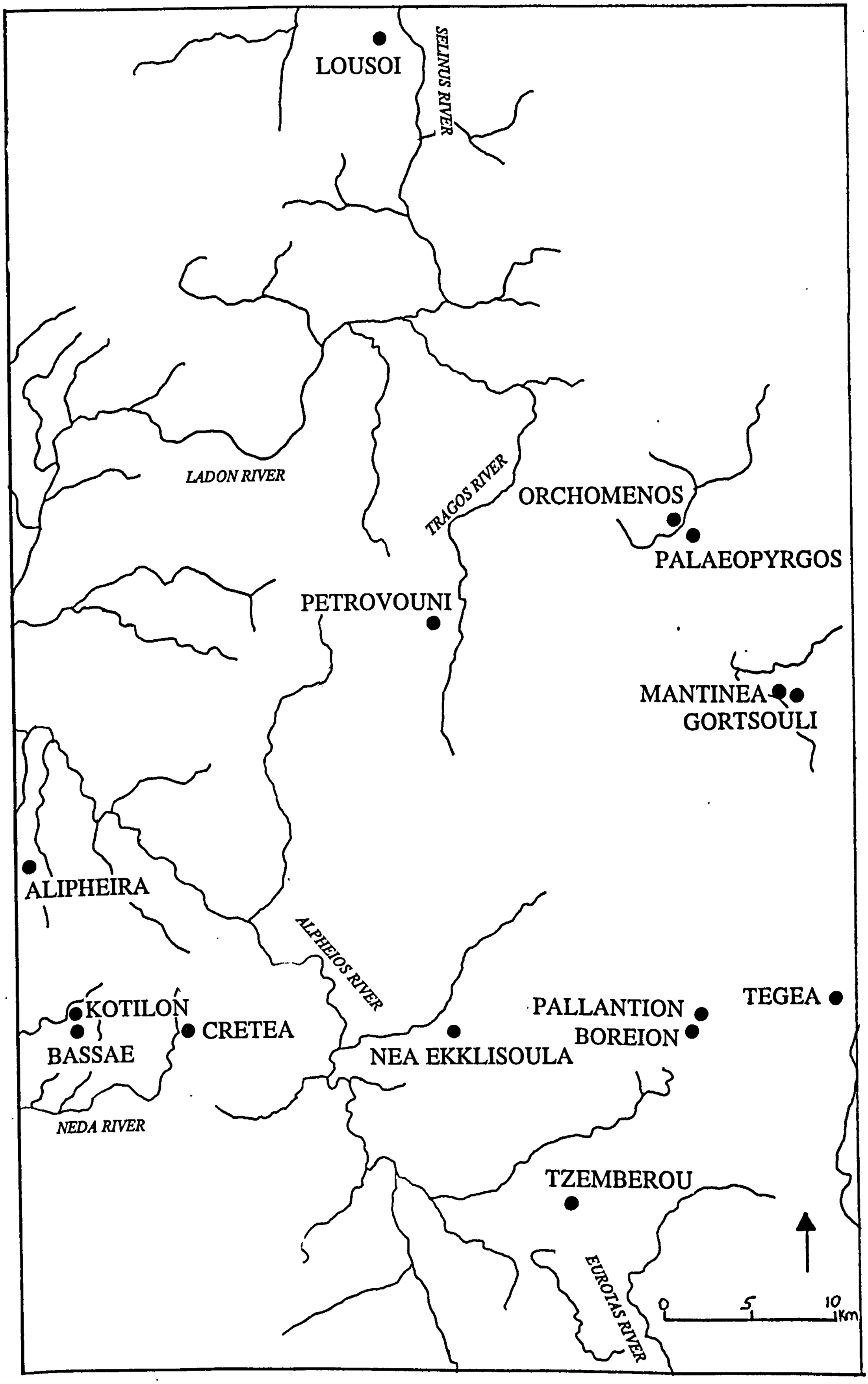
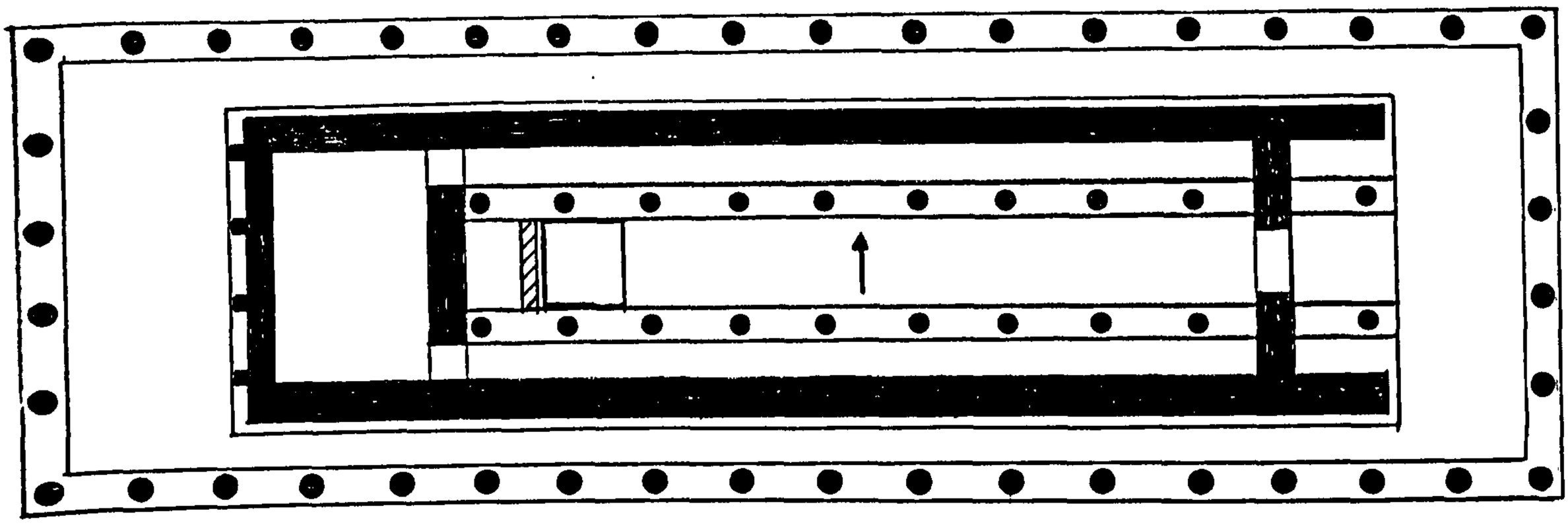
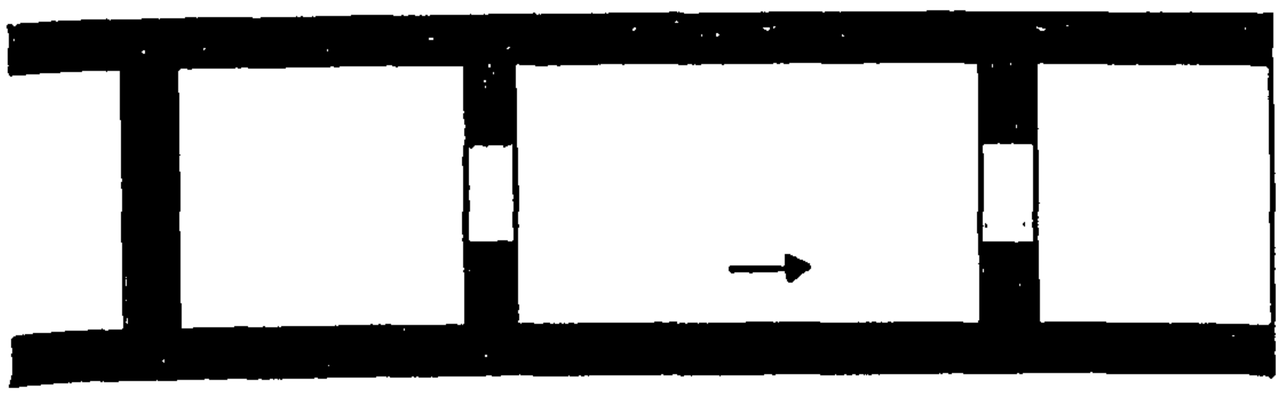


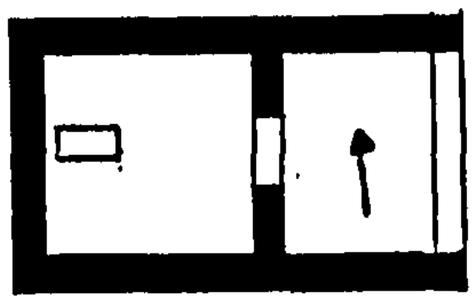
Figure 19 - Map of Arcadia.



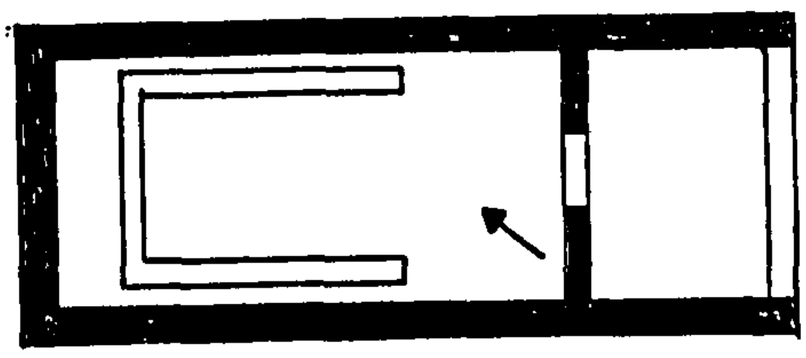
a. Tegea. Early Archaic temple of Athena Alea.



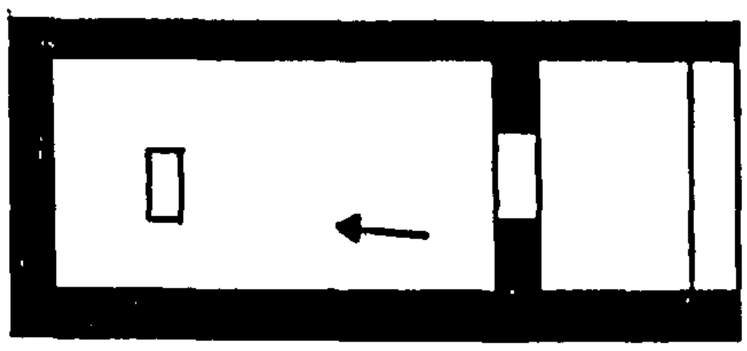
b. Bassae. Early Archaic temple of Apollo.



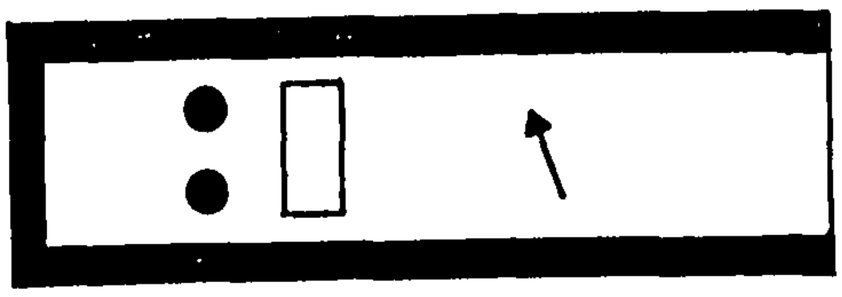
c. Kotilon. Early Archaic temple 'B'.



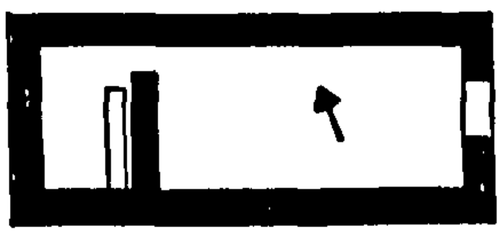
d. Gortsouli. Early Archaic temple(s).



e. Kotilon. Early Archaic temple 'A'.

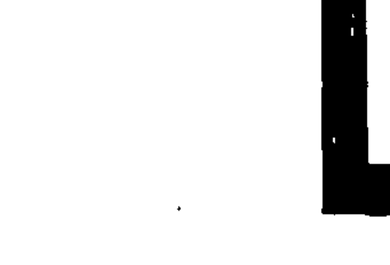


f. Pallantion. Early Archaic temple 'C'.



g. Pallantion. Early Archaic temple 'B'

h. Petrovouni. Early Archaic temple of Poseidon Hippios.



i. Palaeopyrgos. Early Archaic temple.

j. Pallantion. Early Archaic temple 'A'.

Figure 20 - Reconstructed plans of the Early Archaic temples in Arcadia.

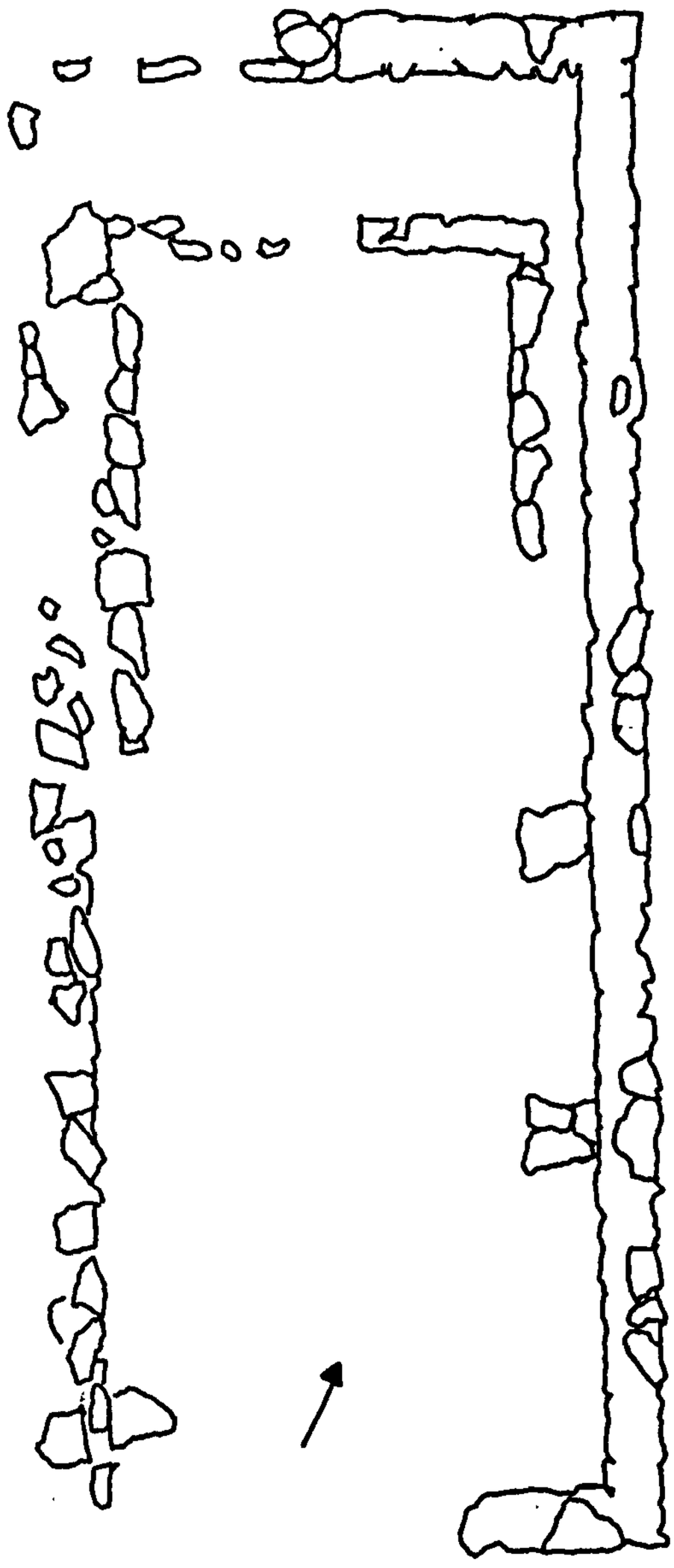
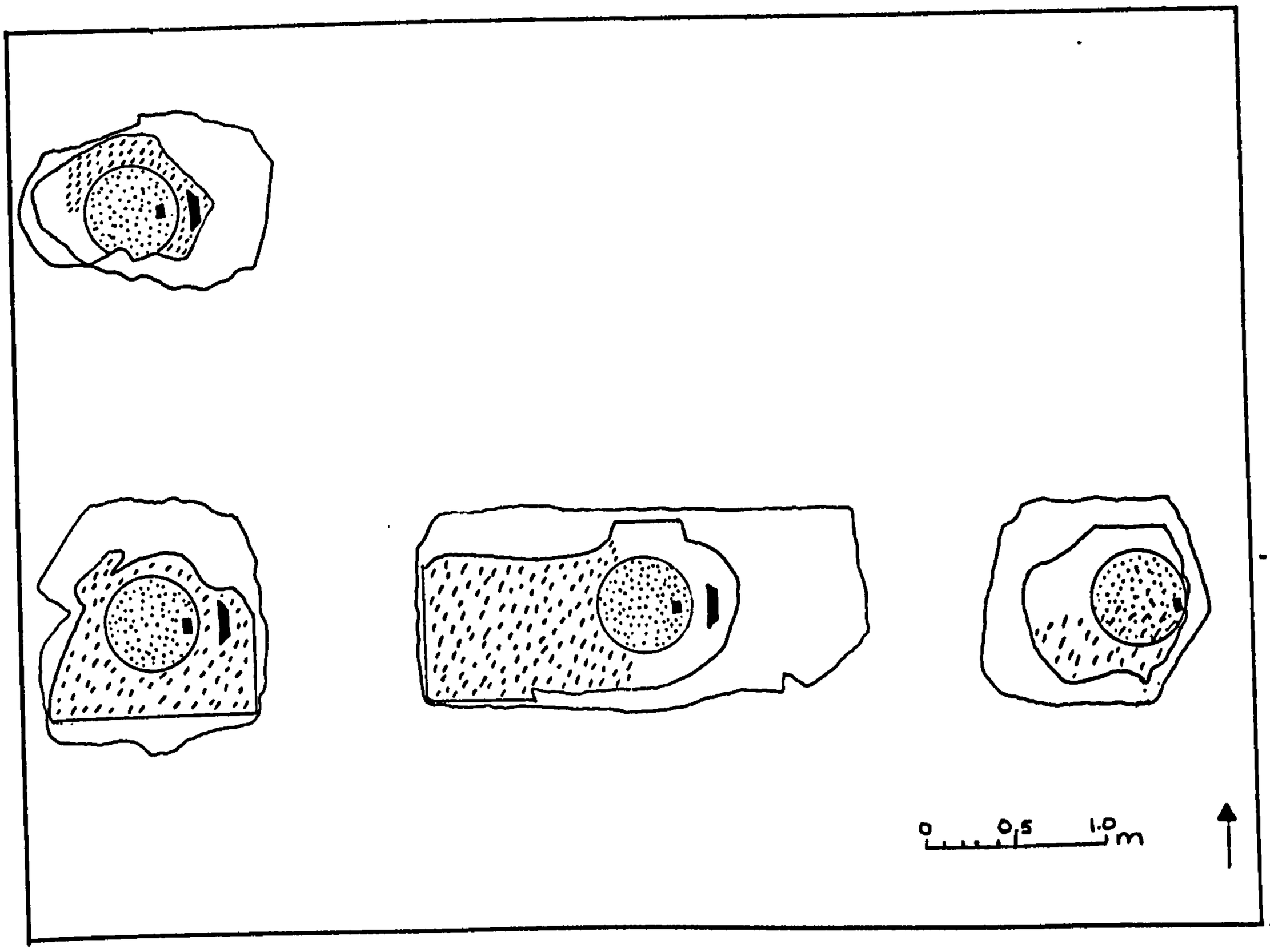
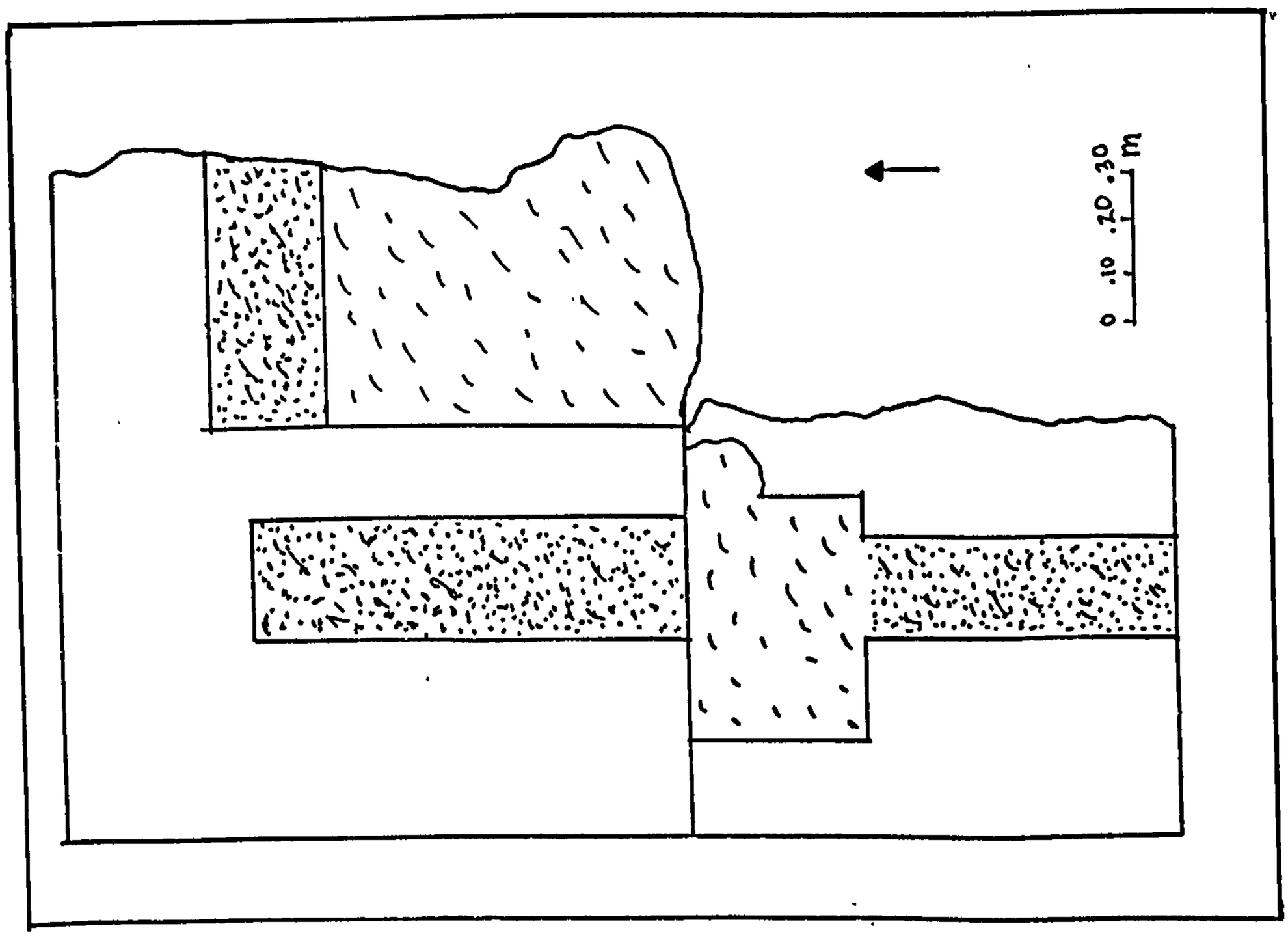


Figure 21 - Gortsouli. Plan of the Early Archaic Temple (s).

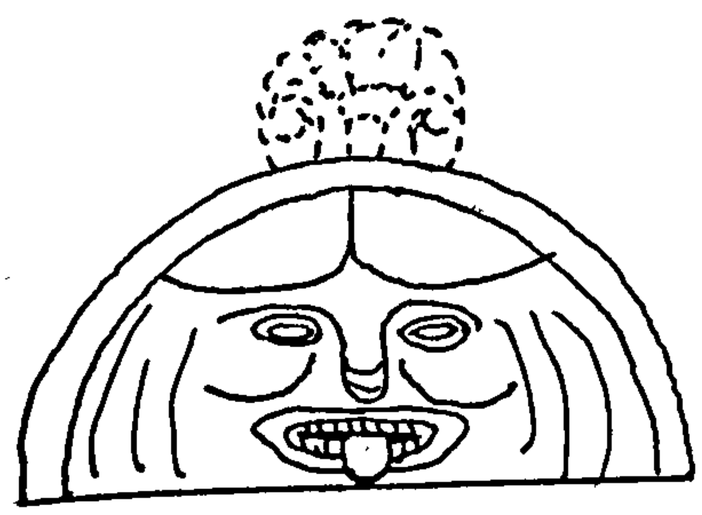


a. Marble interior stylobate blocks with marks for columns.

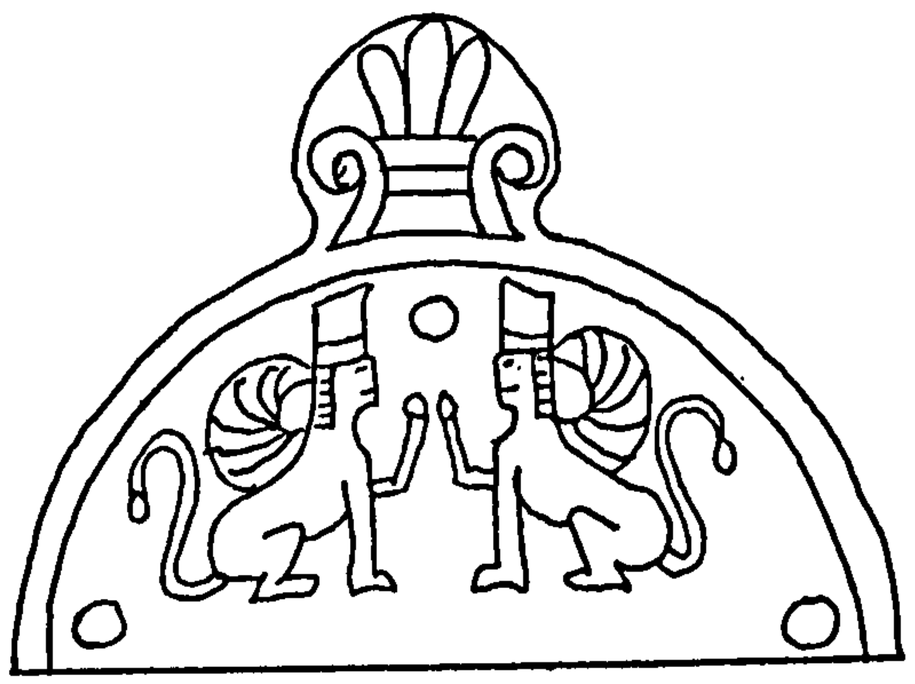


b. Marble toichobate blocks from the northwest corner.

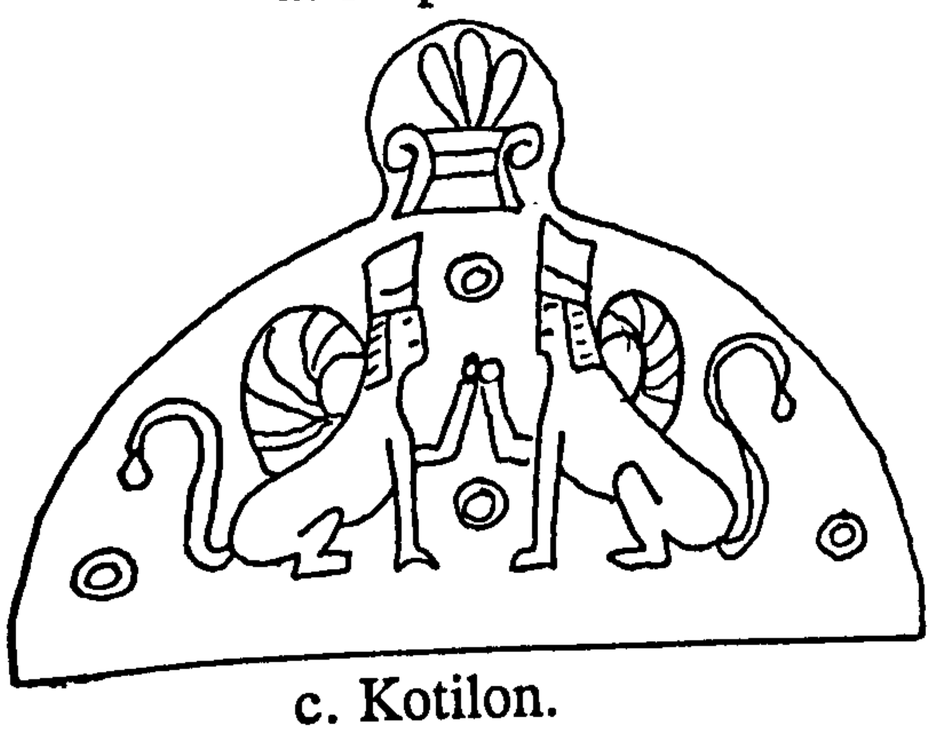
Figure 22 - Tegea. Early Archaic temple of Athena Alea. Marble blocks.



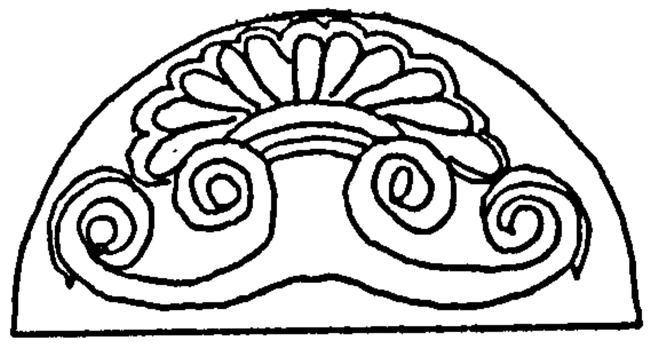
a. Alipheira.



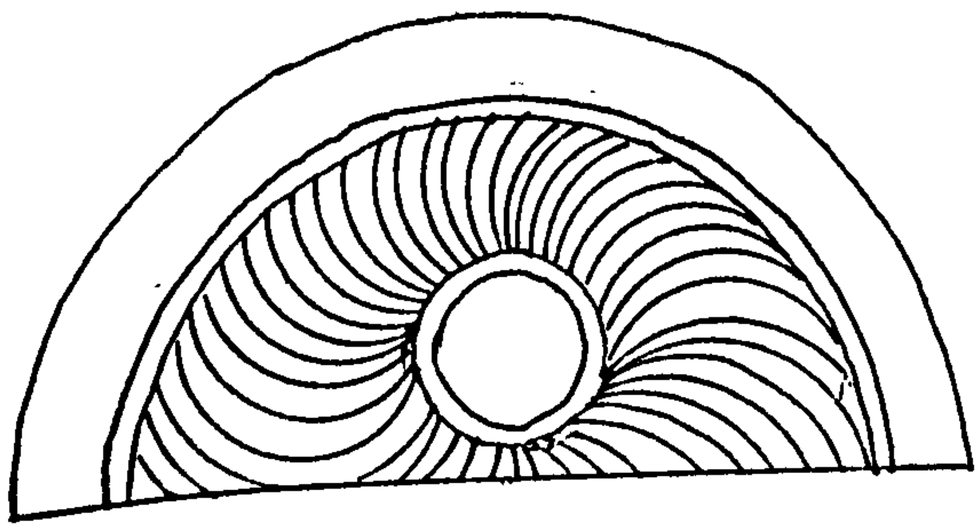
b. Bassae.



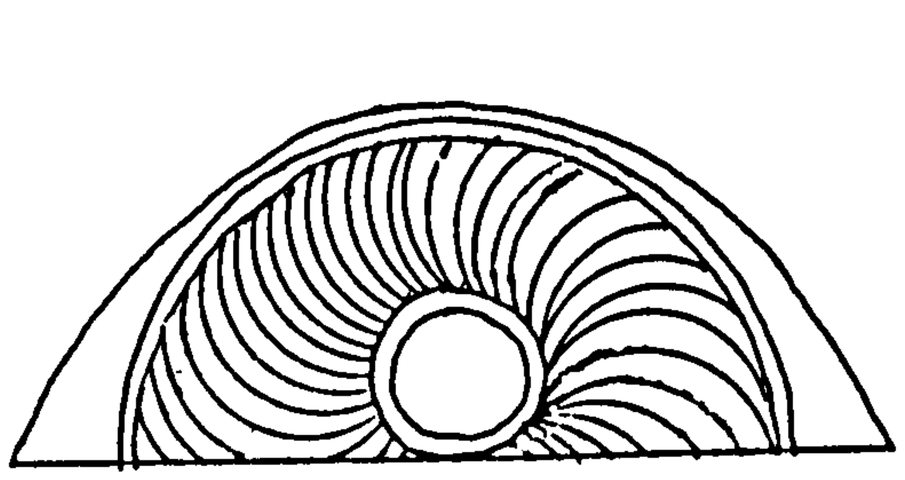
c. Kotilon.



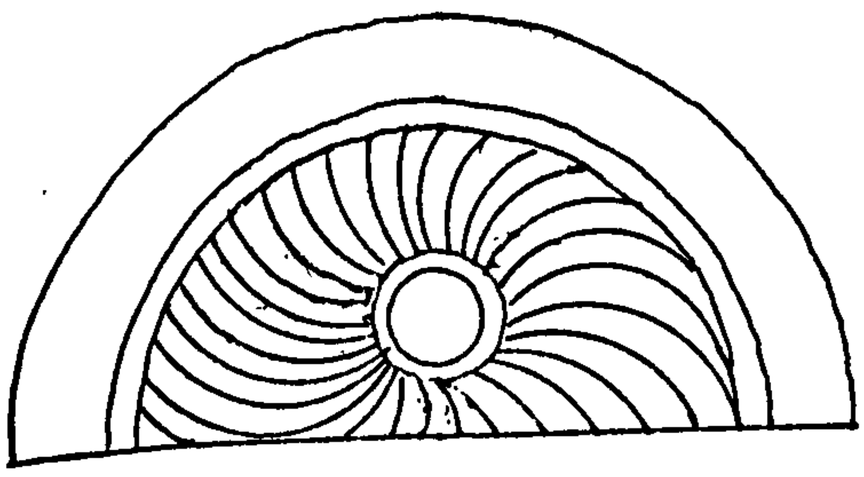
d. Lousoi.



e. Boreion.



f. Boreion.



g. Palaeopyrgos

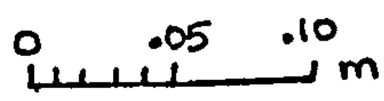


Figure 23 - Antefixes from Arcadia.

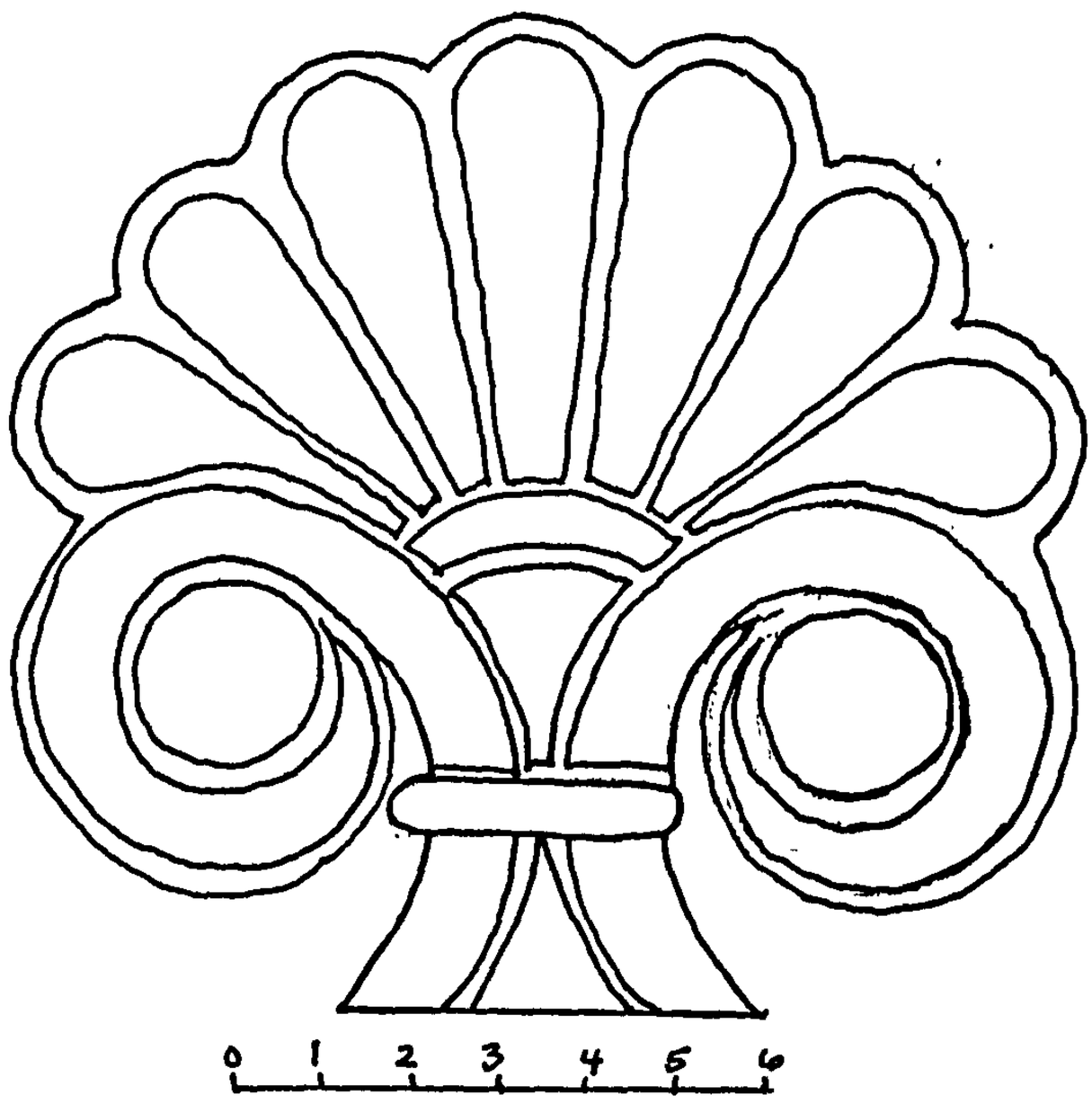
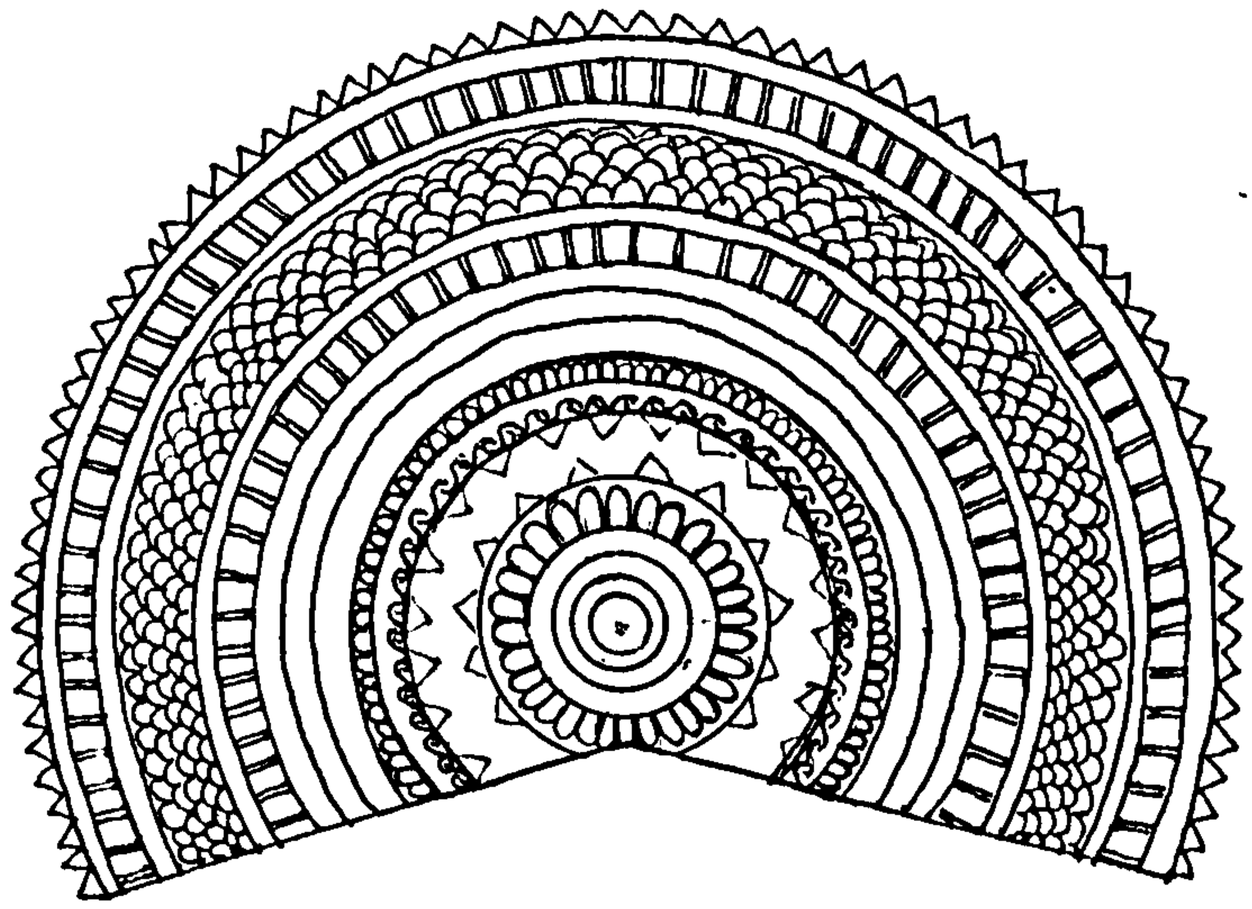
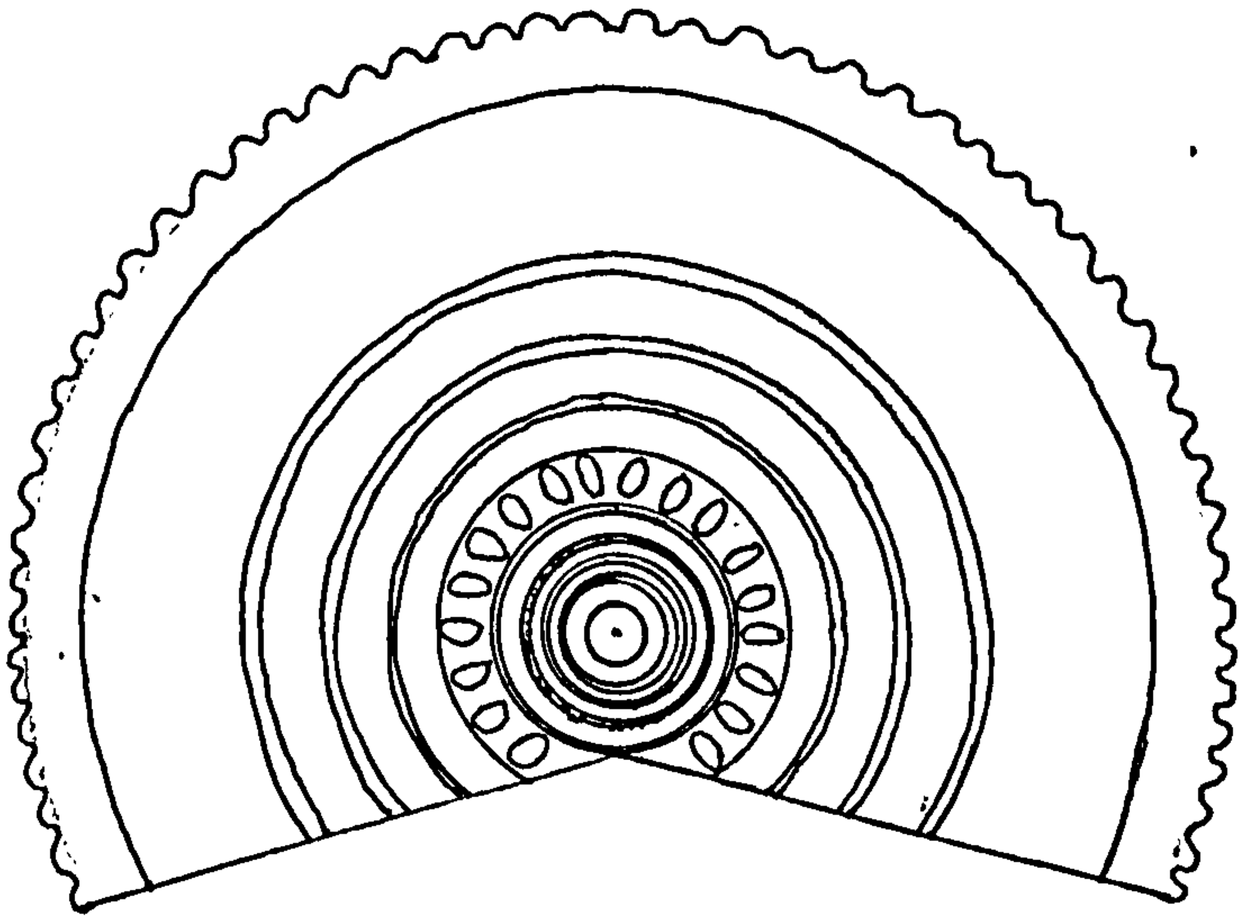


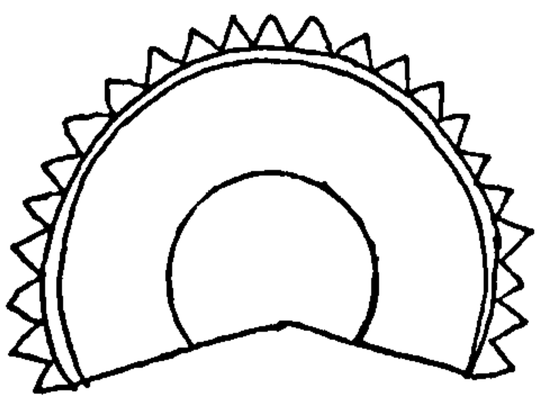
Figure 24 - Reconstruction of the Palmette finials from antefixes found in Arcadia.



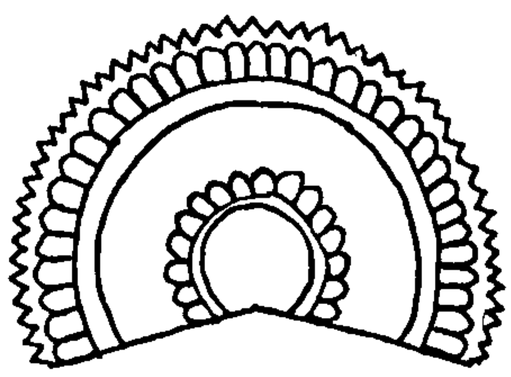
a. Bassae 'A'.



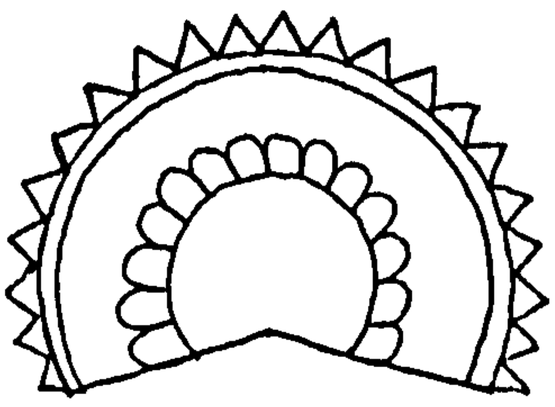
b. Bassae 'B'.



c. Boreion.



d. Lousoi.



e. Petrovouni.

Figure 25 - Acroteria from Arcadia.

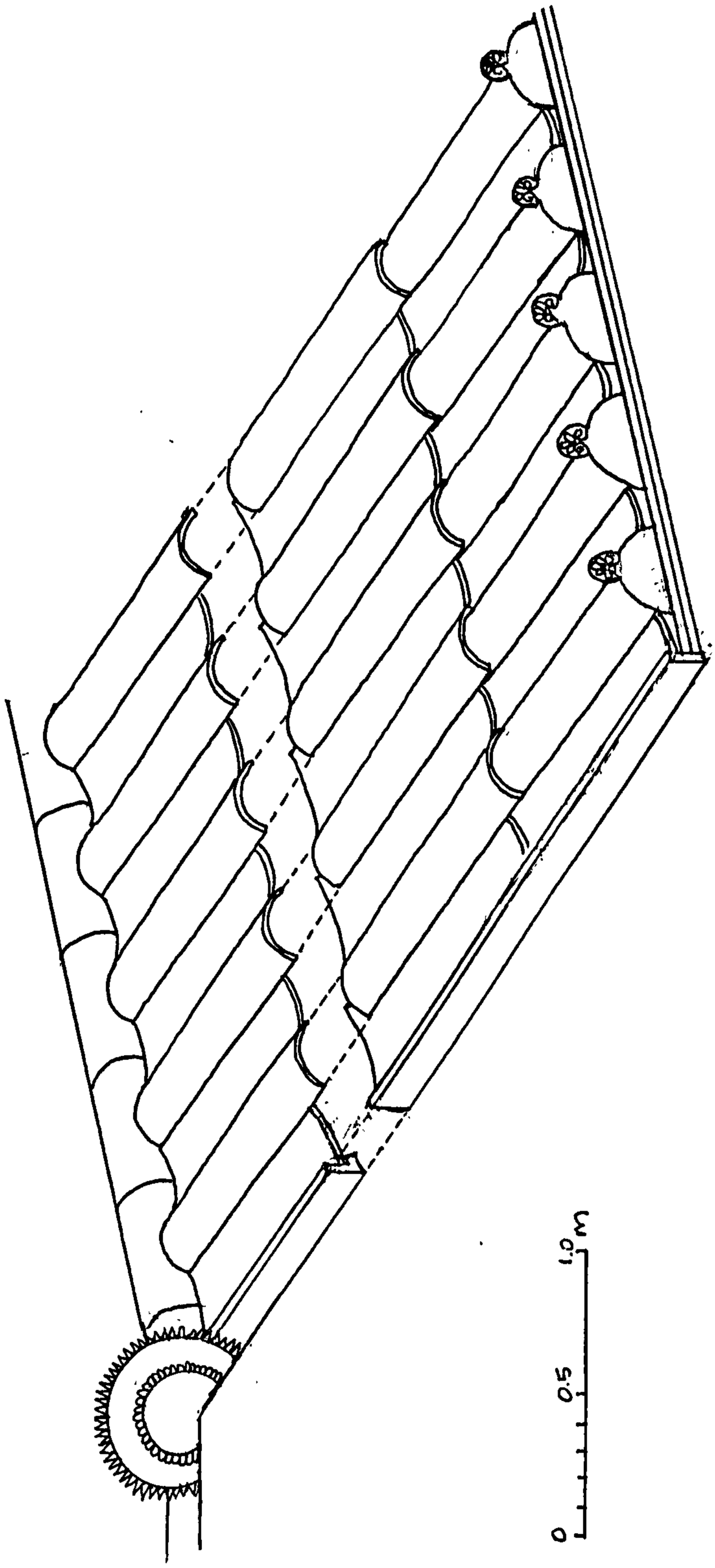


Figure 26 - Reconstruction of a typical Early Archaic Arcadian roof.

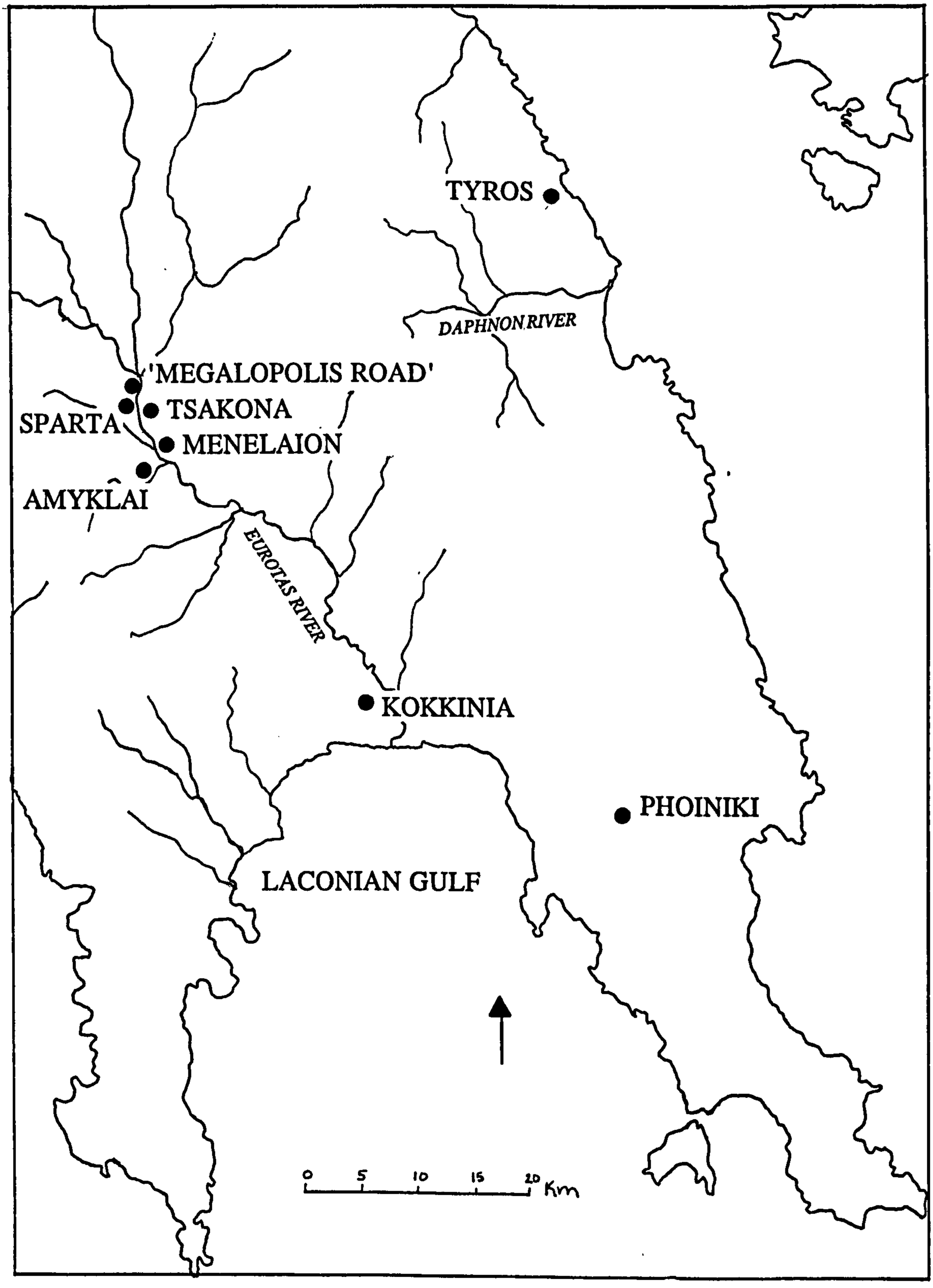
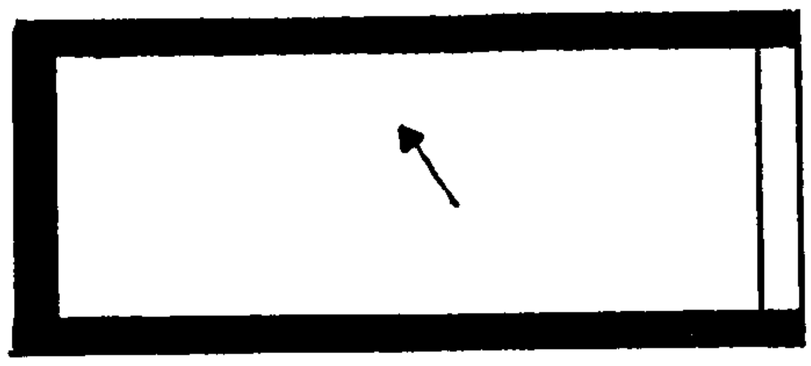
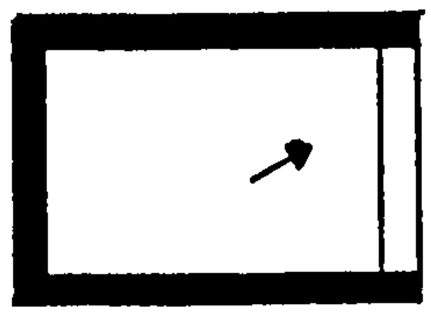


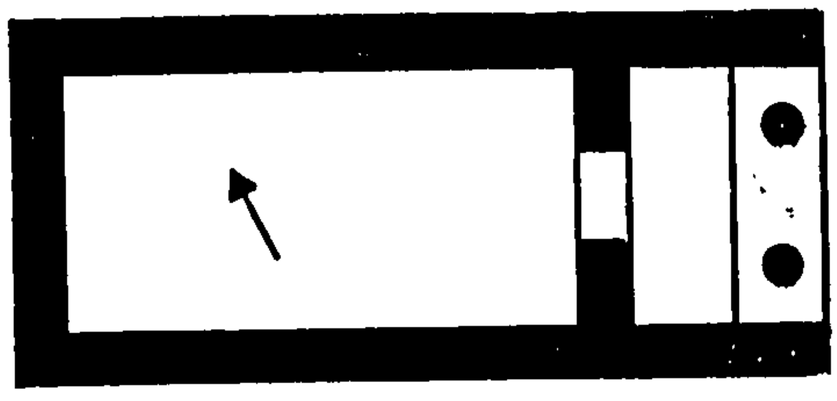
Figure 27 - Map of Laconia.



a. 'Megalopolis Road'. Early Archaic temple or shrine.

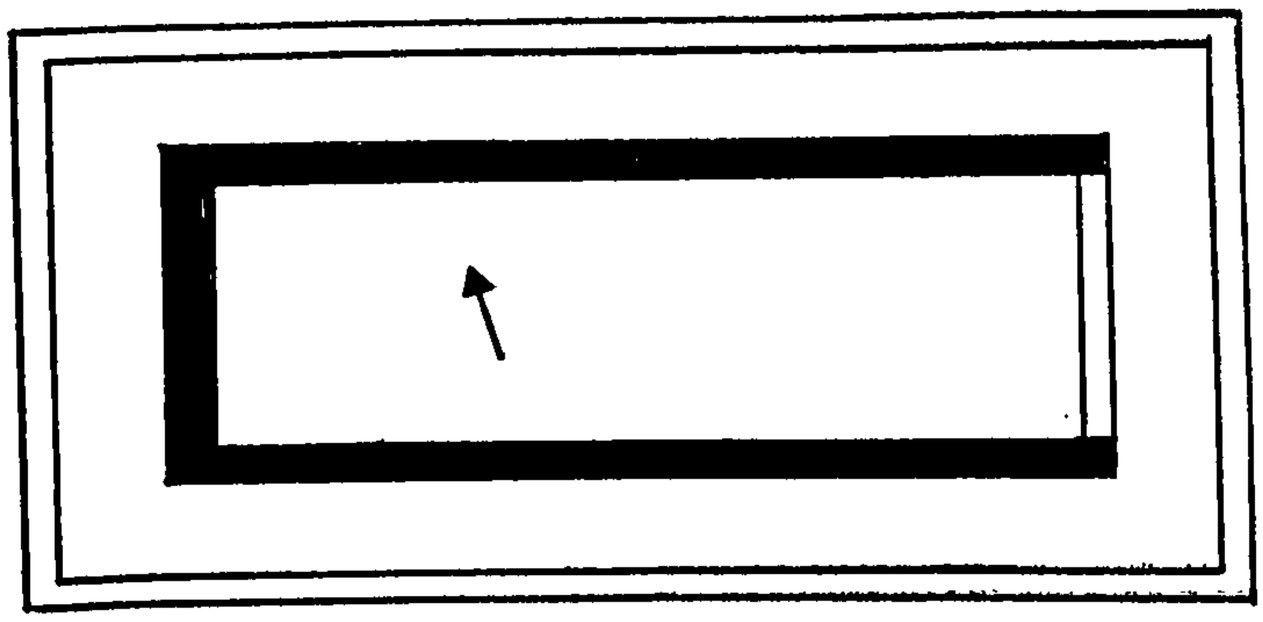


b. Menelaion. Early Archaic temple or shrine of Menelaos and Helen.

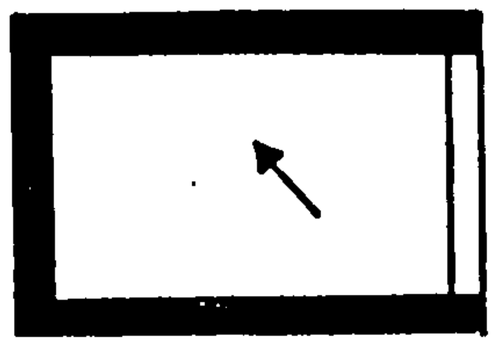


c. Sparta. Second temple of Artemis Orthia.

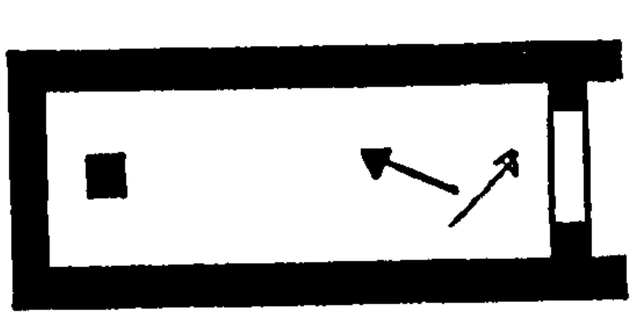
d. Sparta. First temple of Artemis Orthia.



e. Acropolis at Sparta. Archaic temple of Athena Chalkioikos.

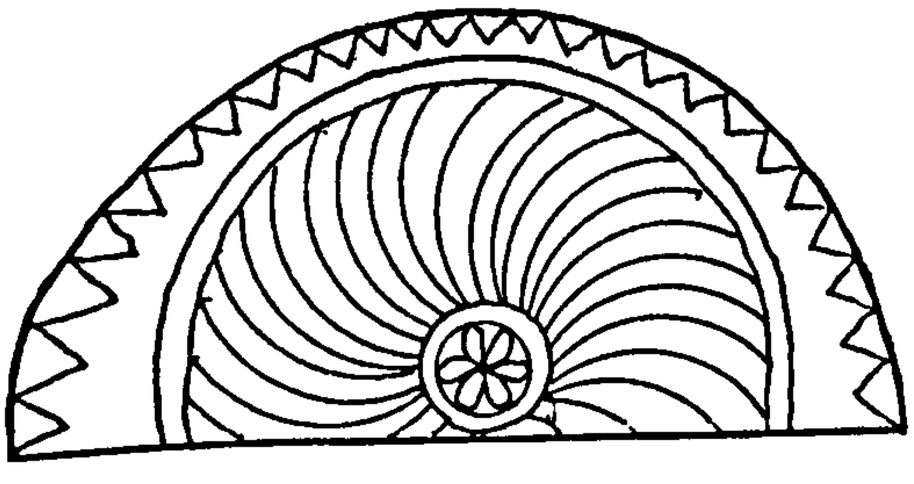


f. Acropolis at Sparta. Early Archaic temple of Athena Ergane.

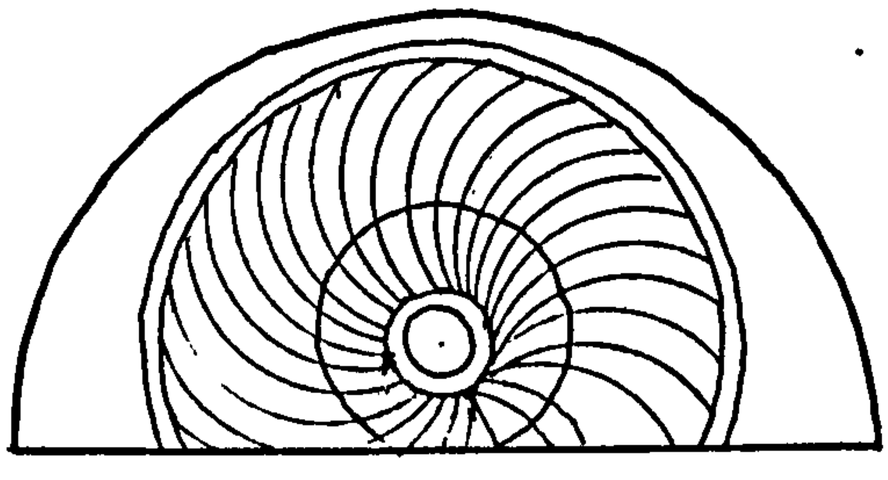


g. Tsakona. Early Archaic temple of Zeus Messapeus.

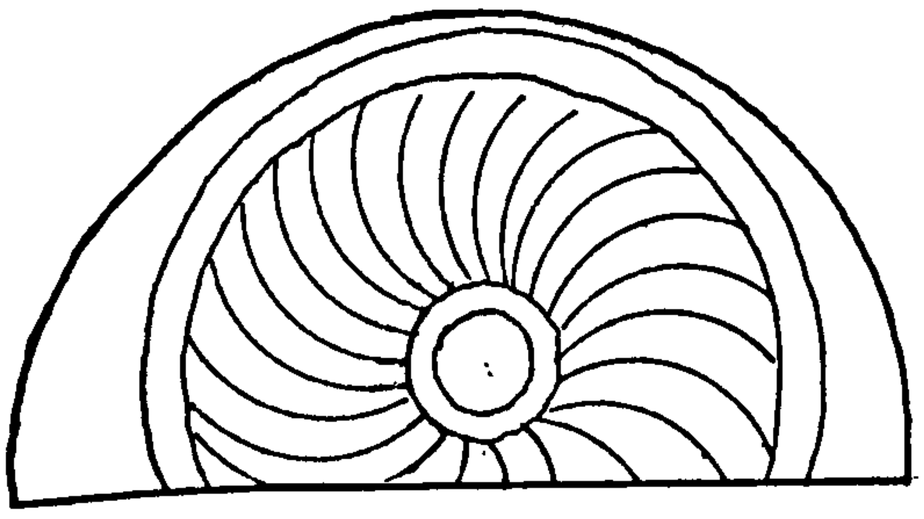
Figure 28 - Reconstructed plans of the Early Archaic temples in Laconia.



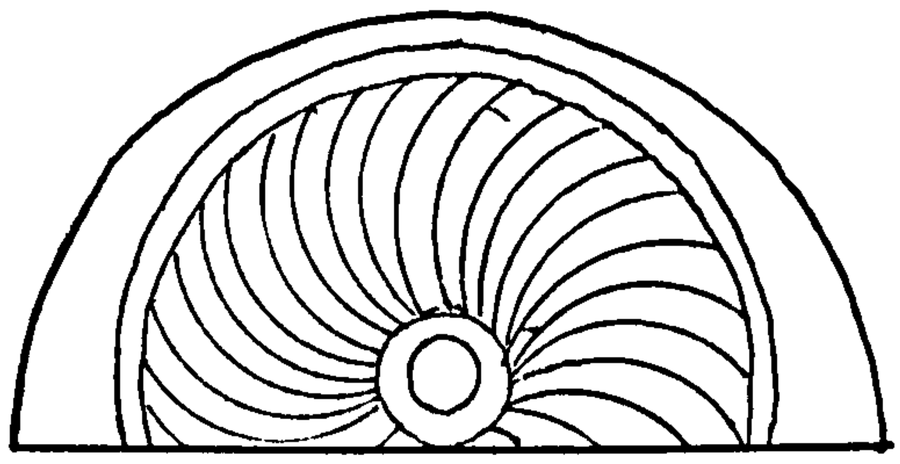
a. Amyklai.



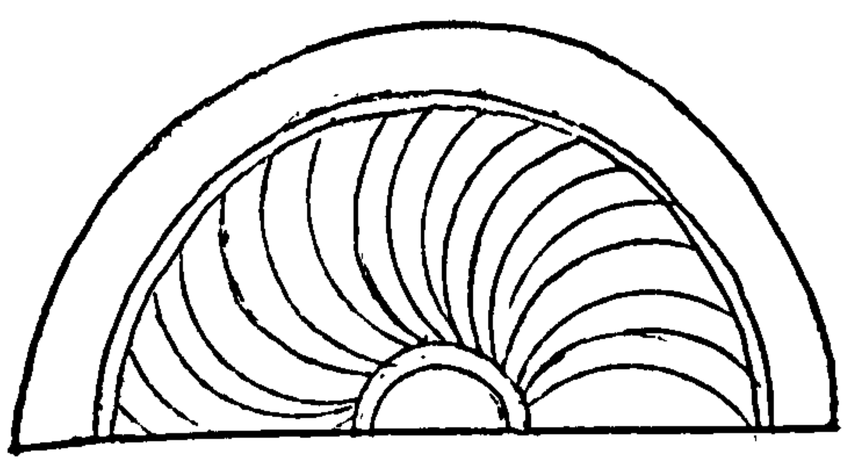
b. Kynouria.



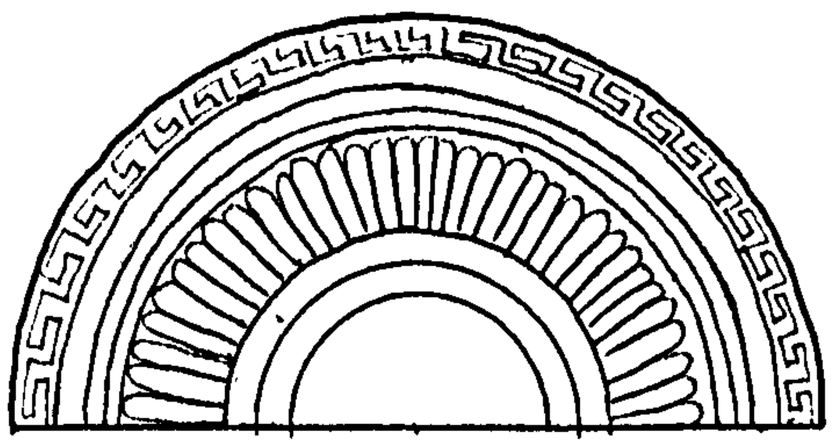
c. Phoiniki.



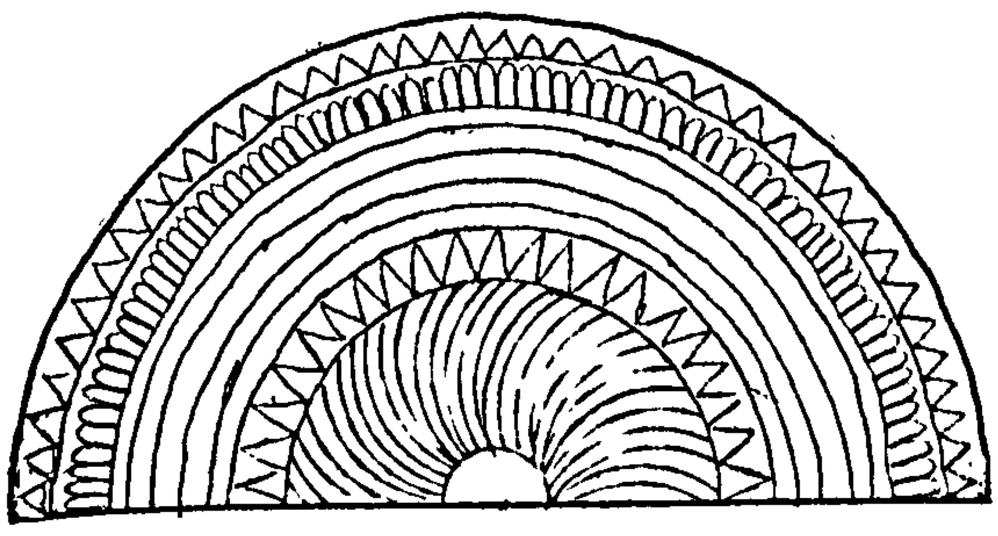
d. Tsakona



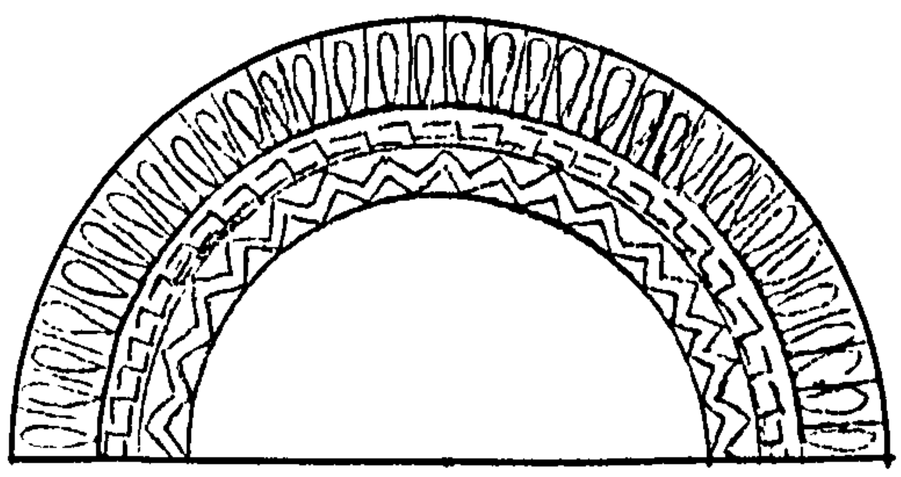
e. Sparta. First temple of Artemis Orthia.



f. Sparta. Second temple of Artemis Orthia.



g. Menelaion.



h. Sparta. Site north of the Artemis Orthia sanctuary.

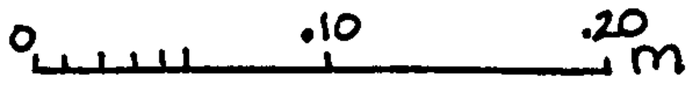
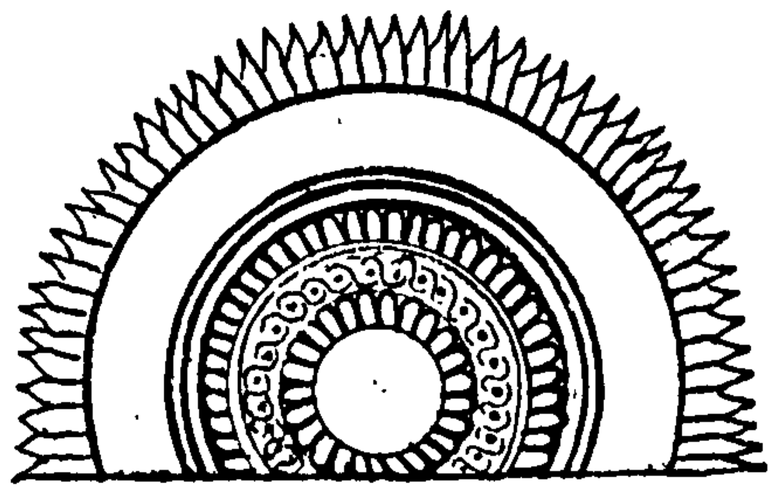
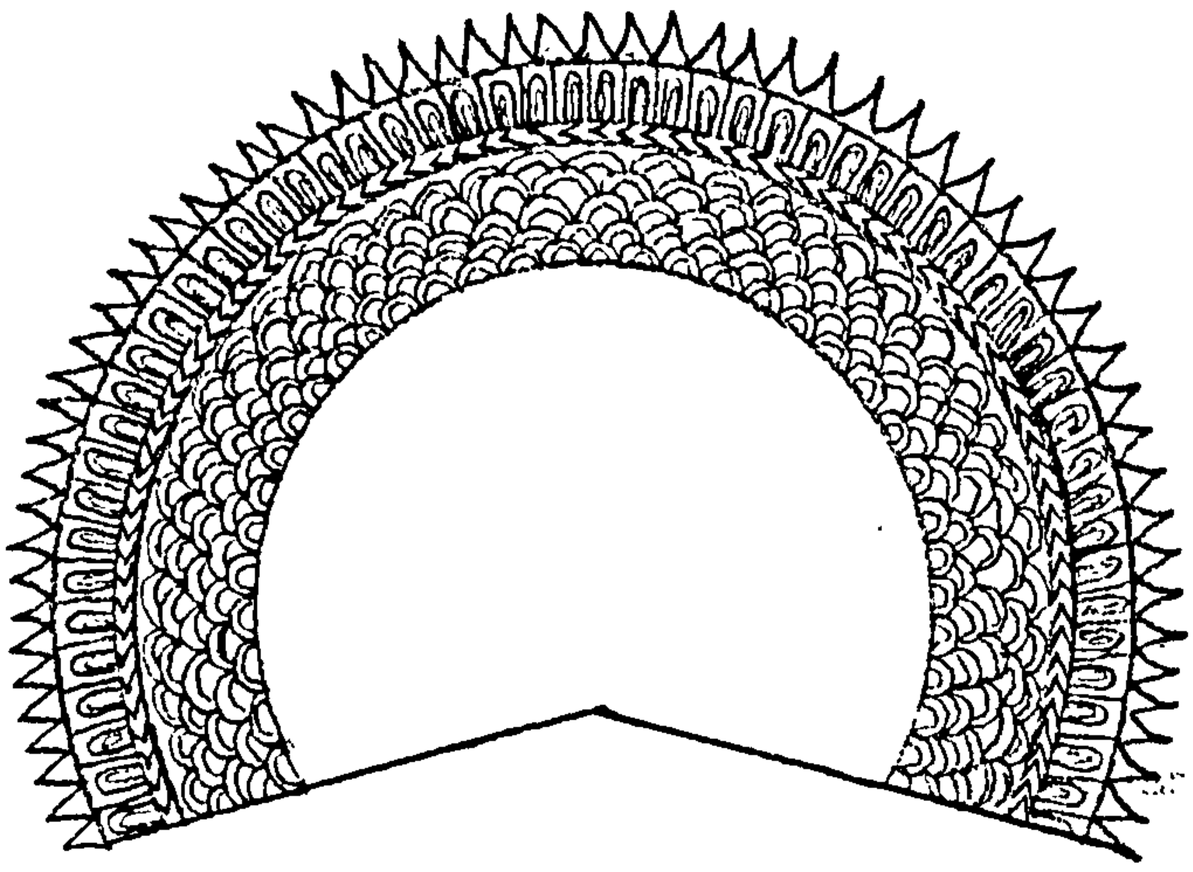


Figure 29 - Antefixes from Laconia.

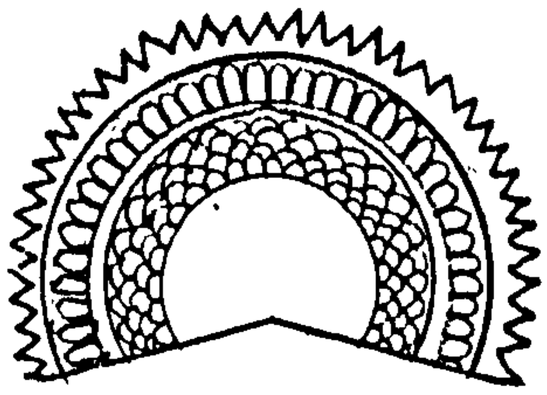
a. Sparta. Second temple of Artemis Orthia.



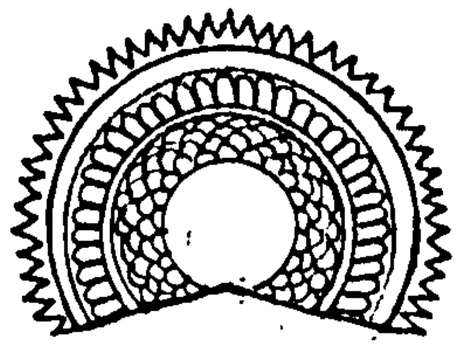
b. Amyklai.



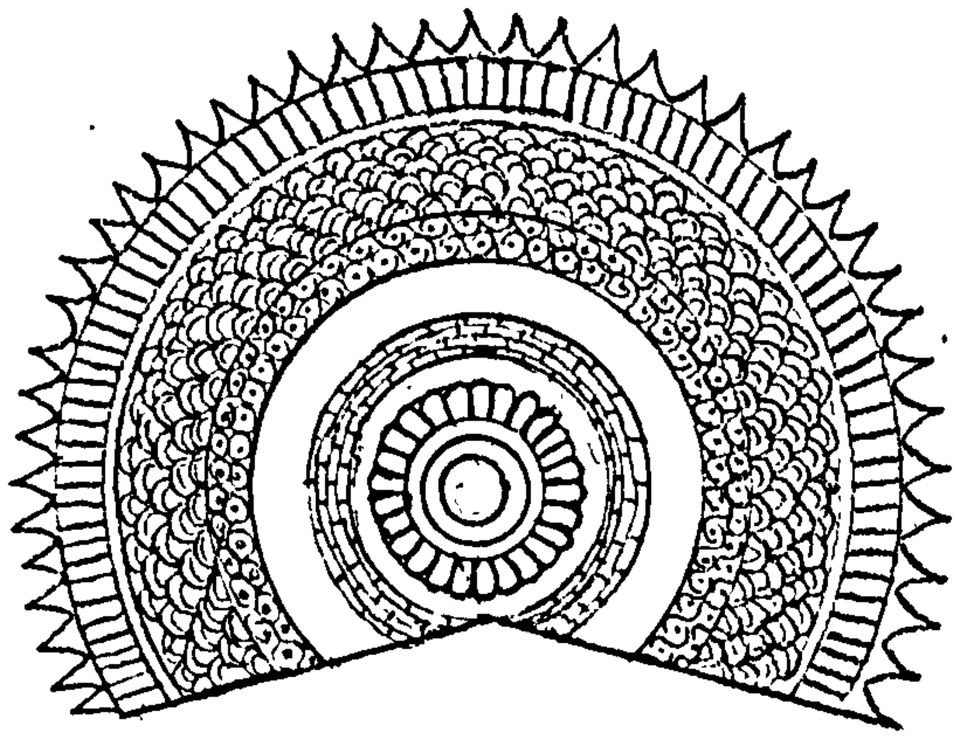
c. Sparta. Second temple of Artemis Orthia.



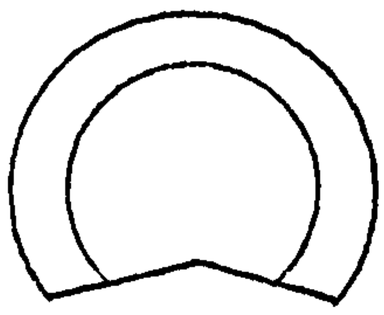
d. Kynouria



e. Kynouria.



f. Sparta. Temple of Athena Ergane.



g. Sparta. First temple of Artemis Orthia.

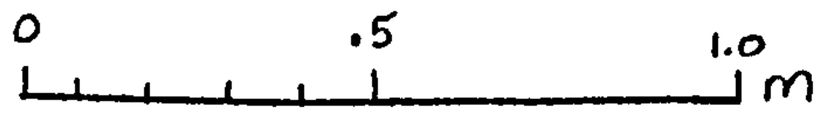


Figure 30 - Acroteria from Laconia.

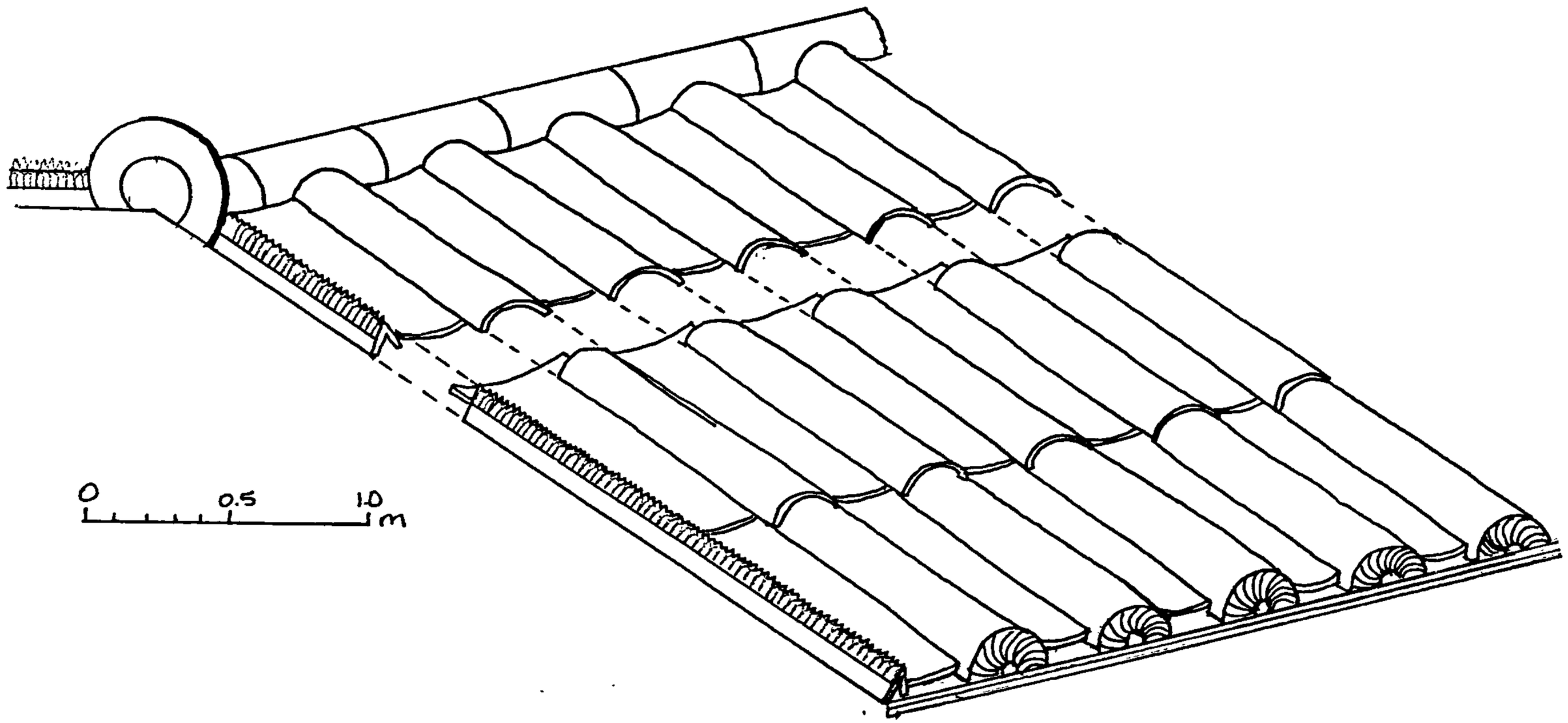


Figure 31 - Reconstruction of the roof from the first temple of Artemis Orthia at Sparta.

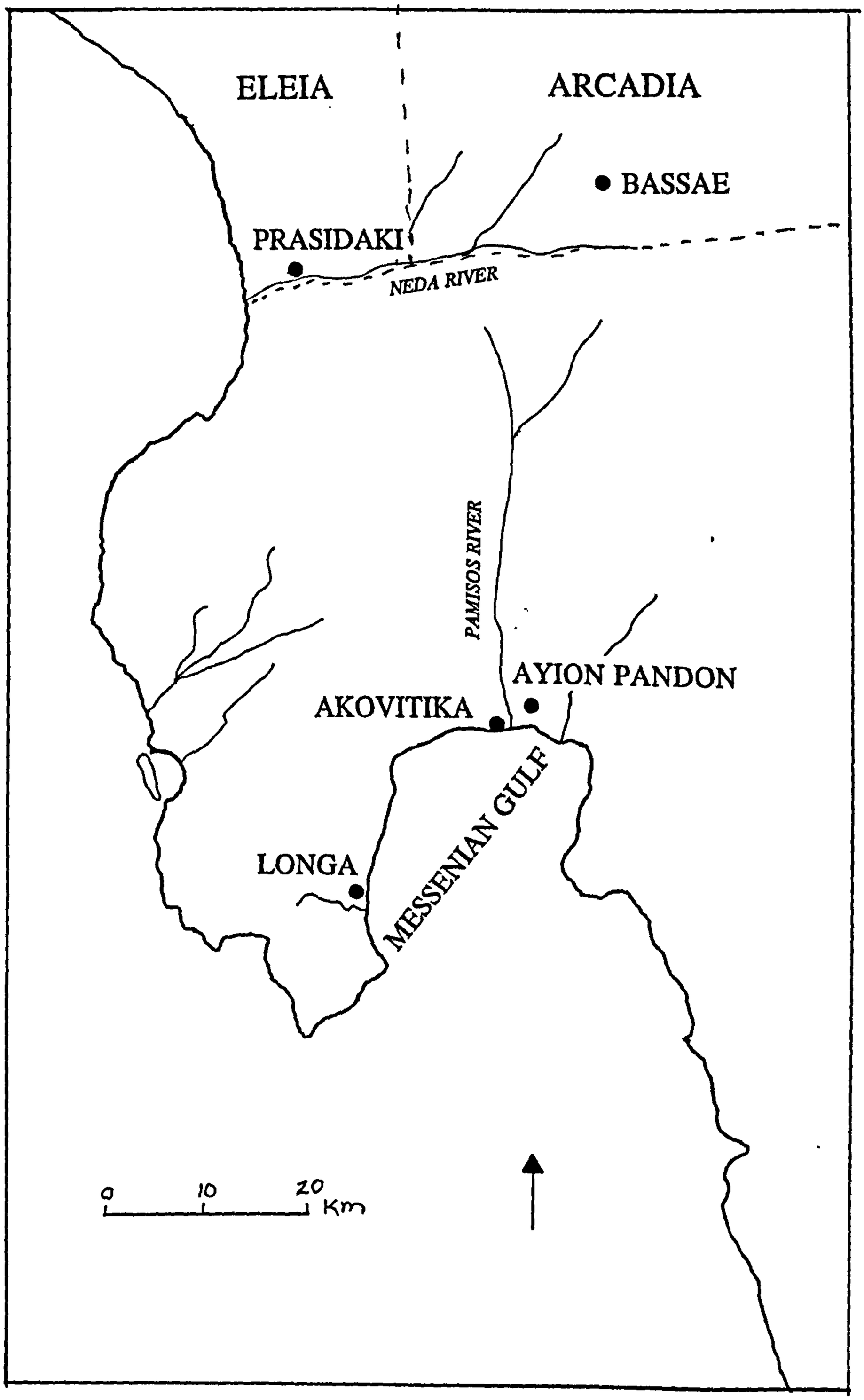
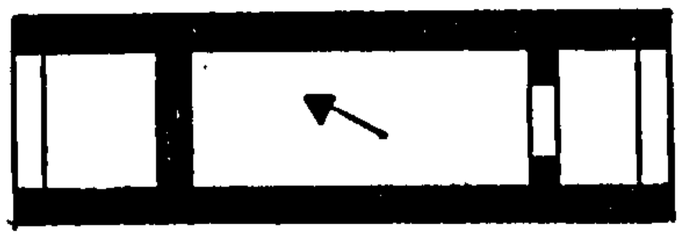
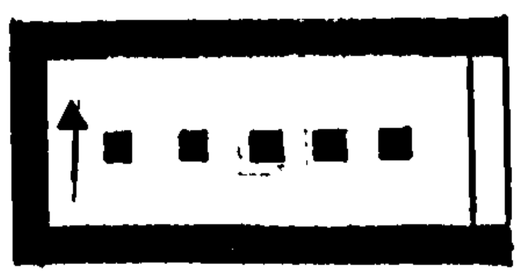


Figure 32 - Map of Messenia.



a. Longa. Early Archaic temple 'B'.



b. Longa. Early Archaic temple 'D'.

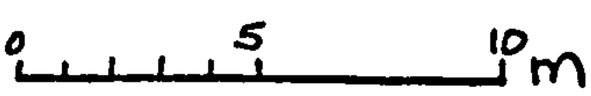


Figure 33 - Reconstructed plans of Early Archaic temples in Messenia.

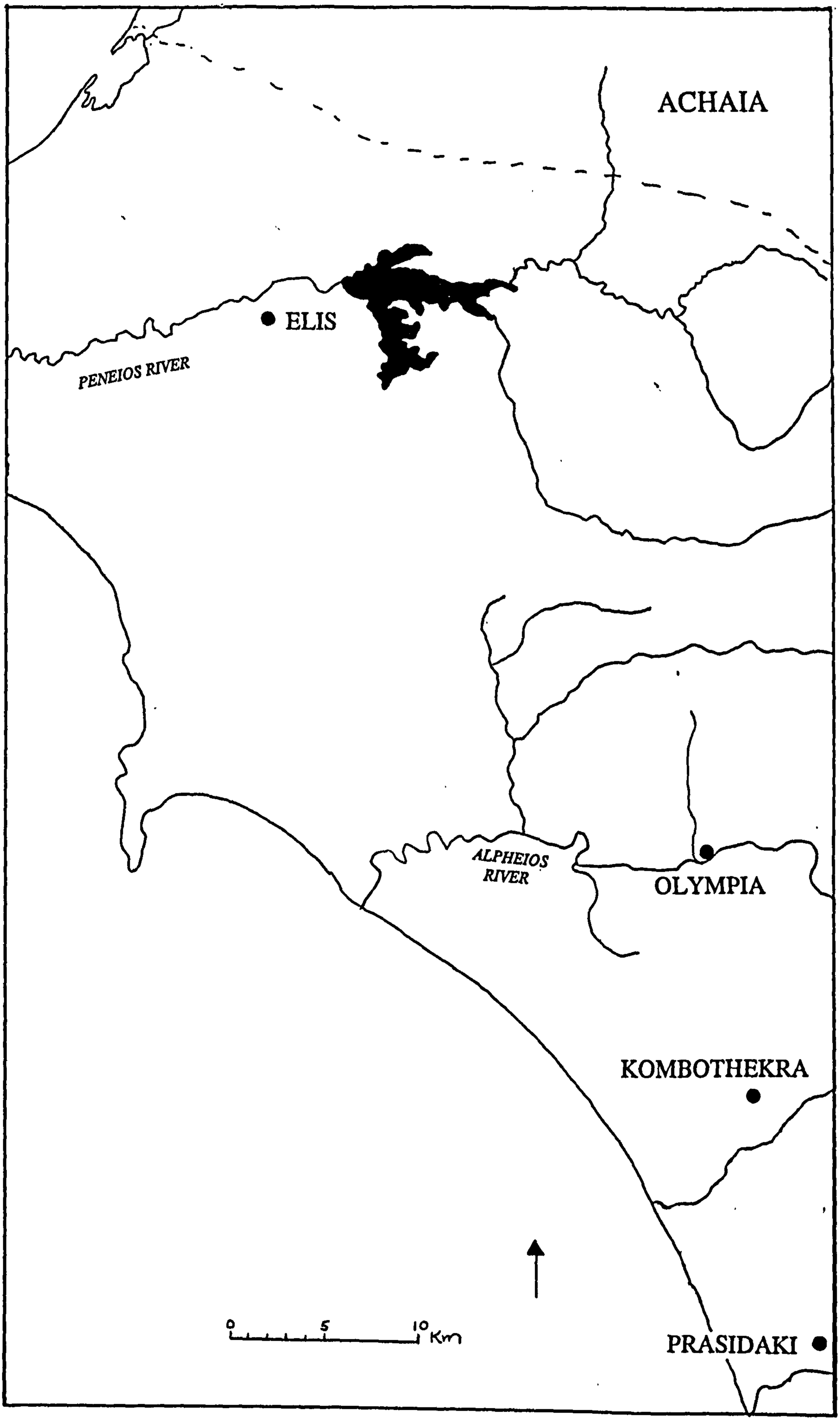
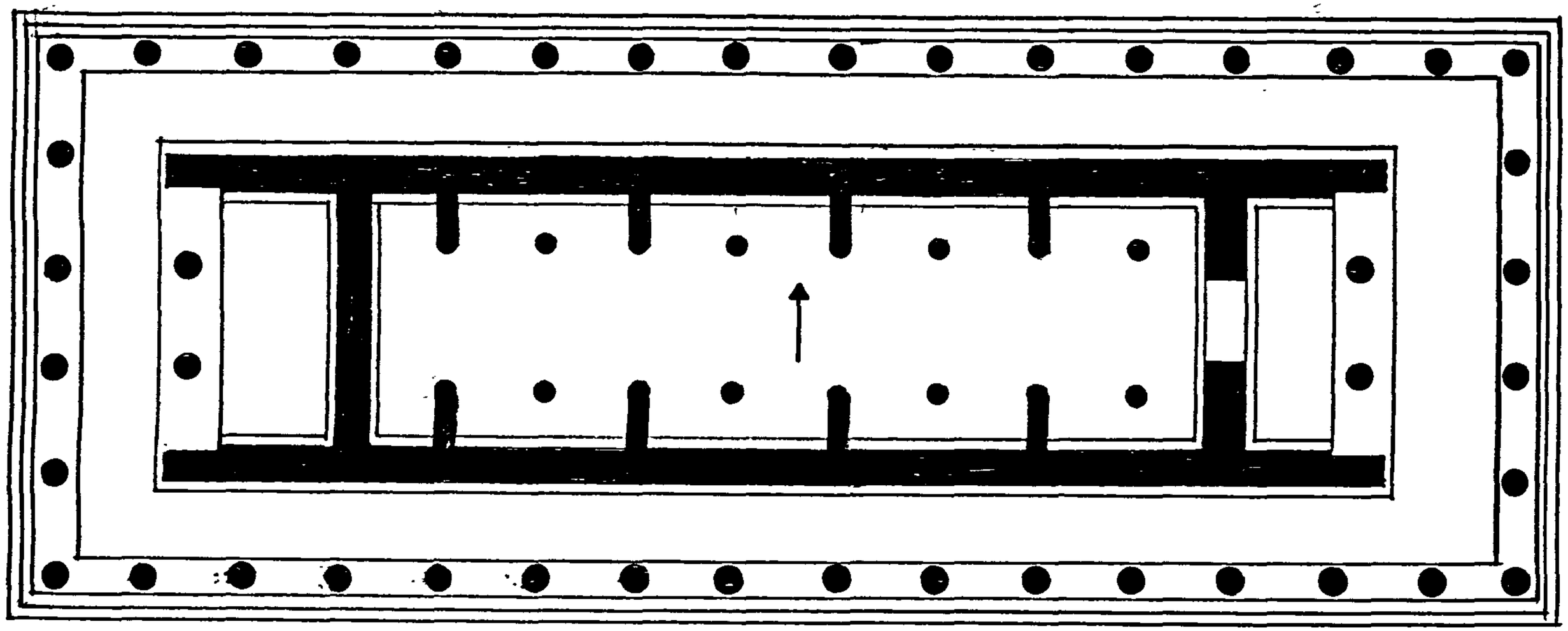
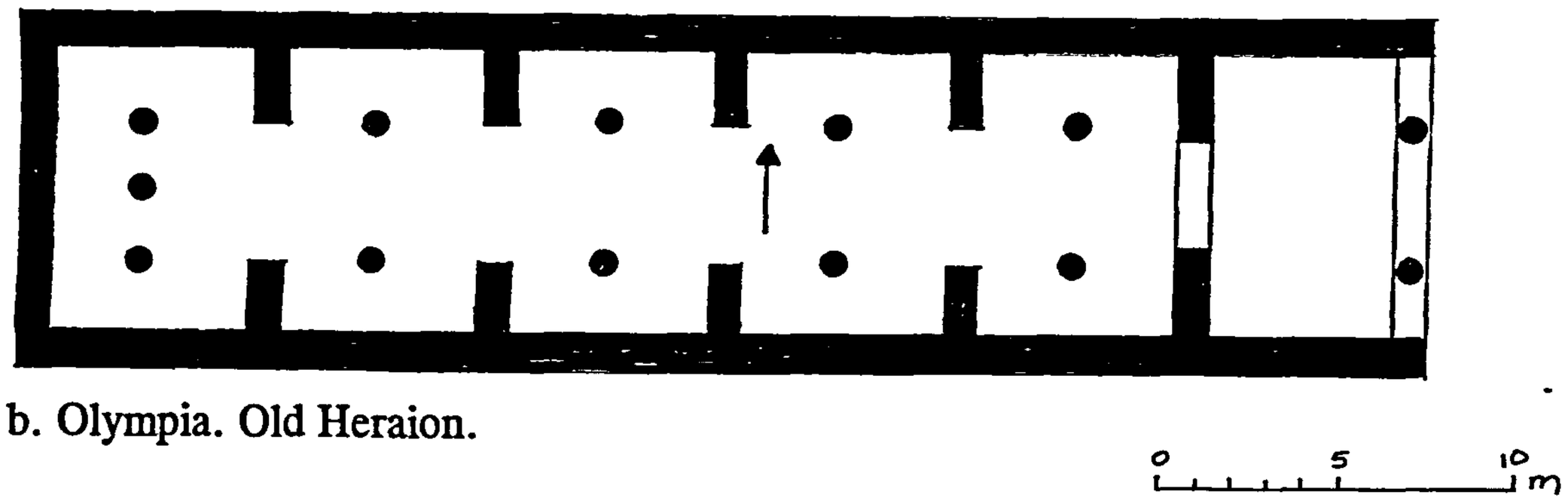


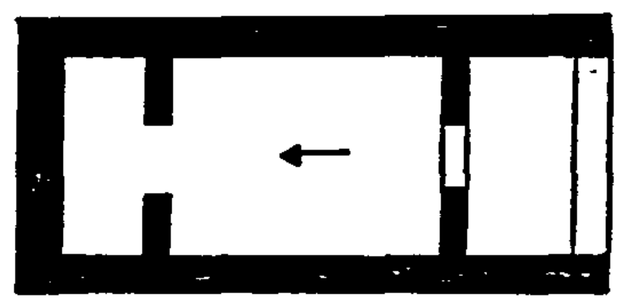
Figure 34 - Map of Eleia.



a. Olympia. Heraion.



b. Olympia. Old Heraion.



c. Kombothekra. Early Archaic temple of Artemis Limnatis.

Figure 35 - Reconstructed plans of the Early Archaic temples in Eleia.

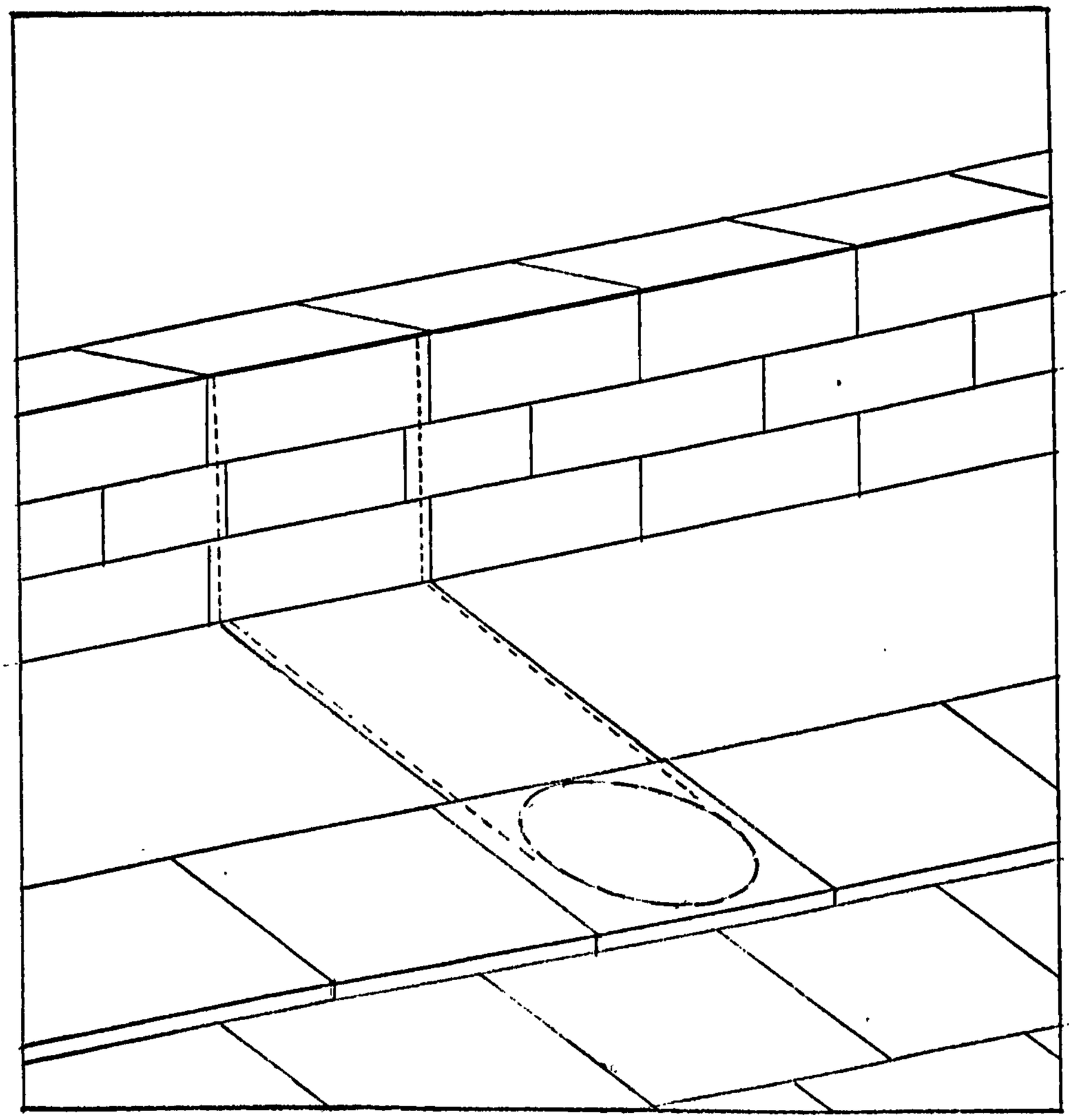


Figure 36 - View of the stylobate and wall where the piers were connected in the interior at the Heraion of Olympia.

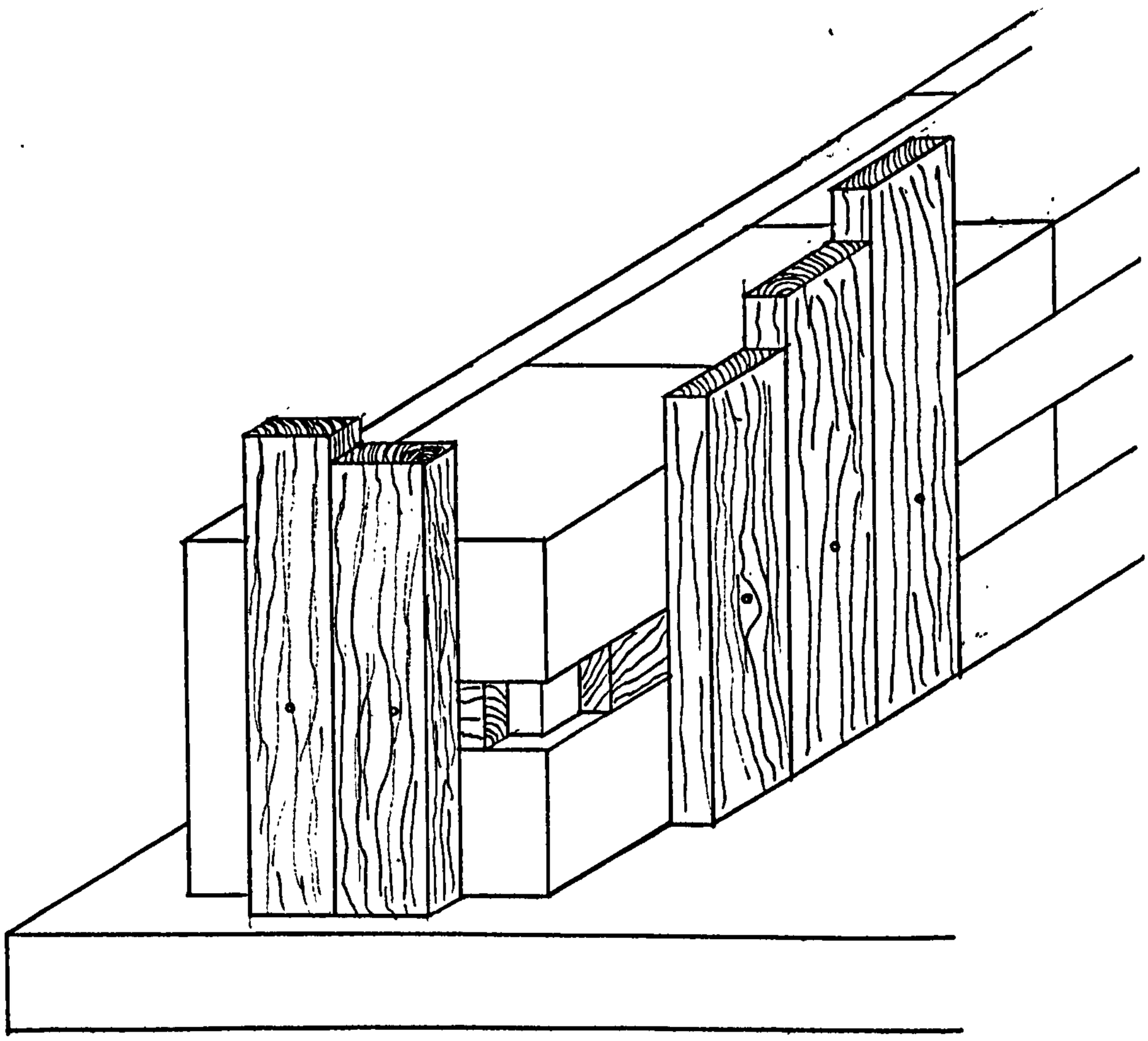


Figure 37 - Reconstruction of the timbers on the antae at the Heraion of Olympia, after Curtius and Adler (1896) pl. 23.

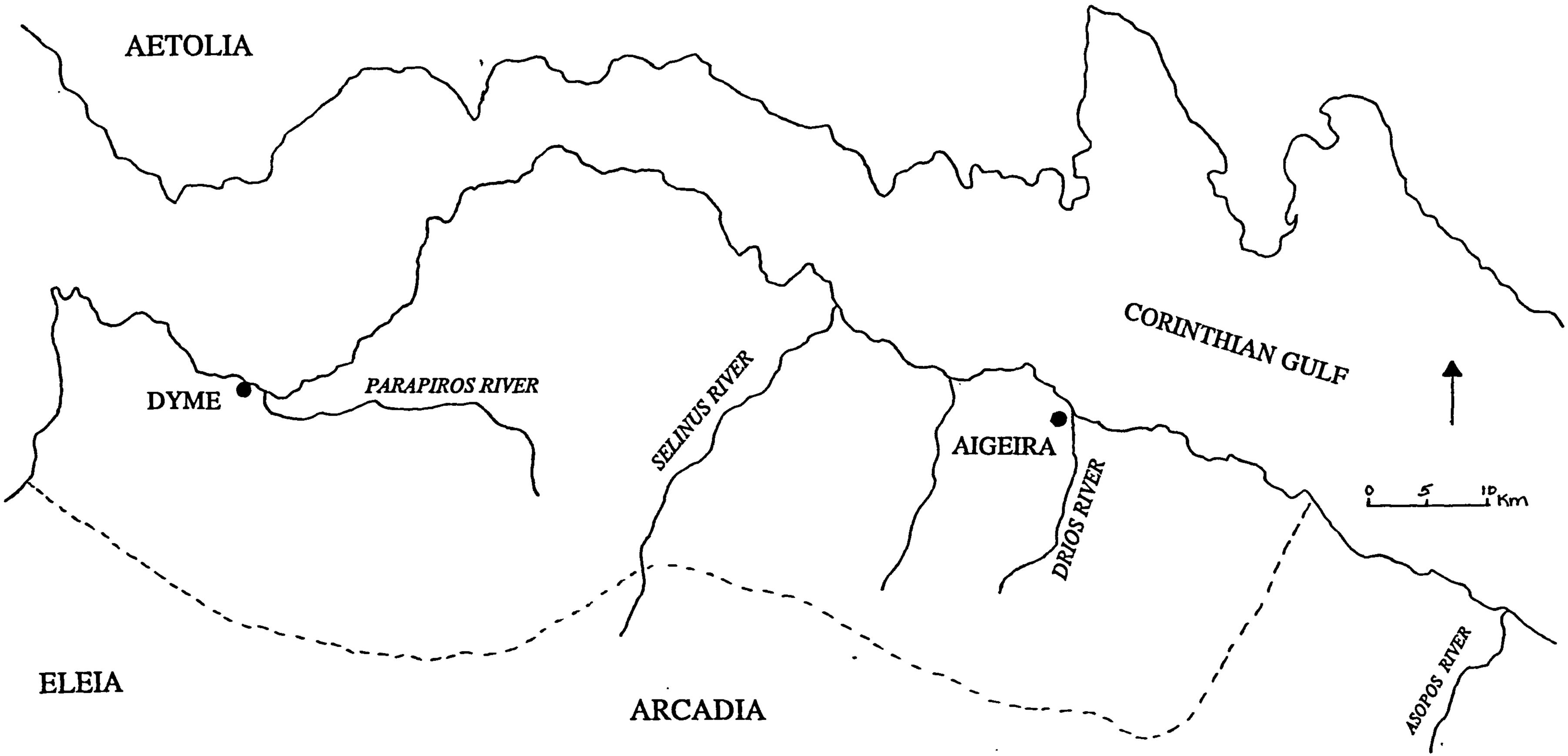


Figure 38 - Map of Achaia.

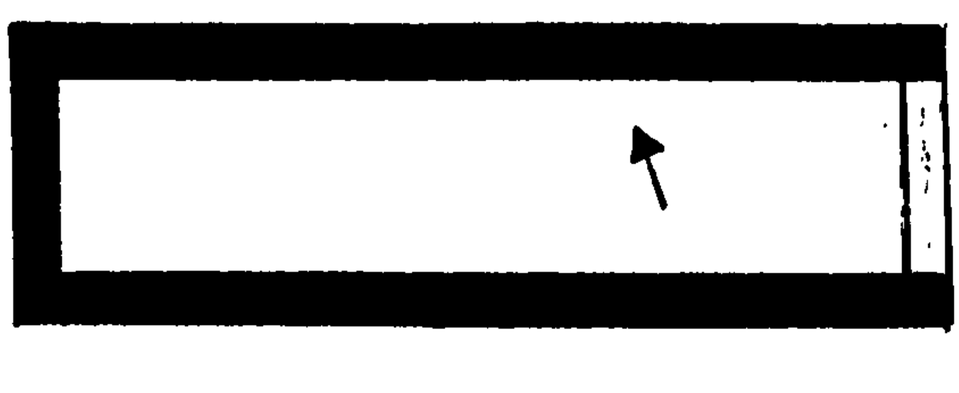
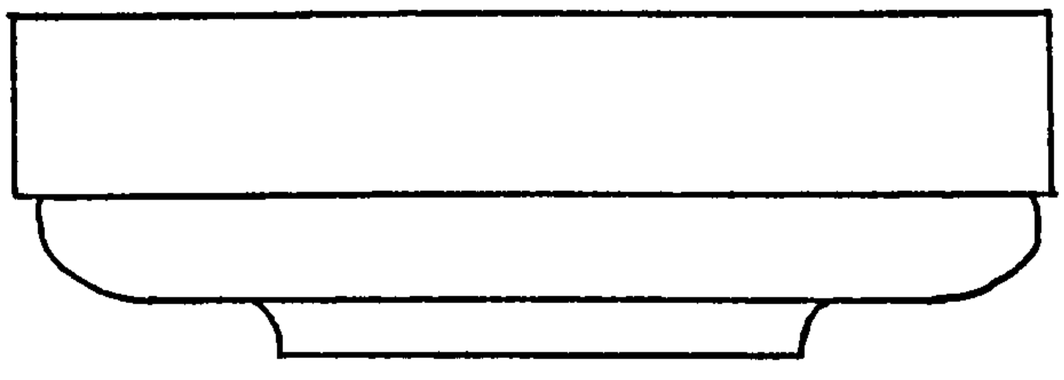
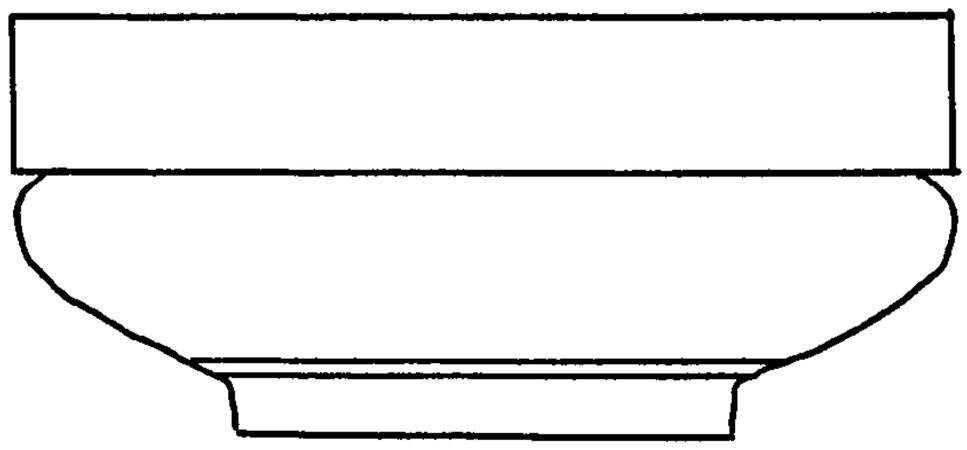


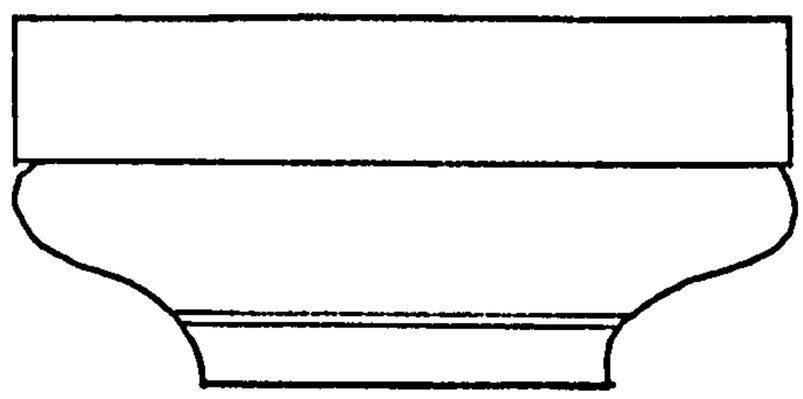
Figure 39 - Reconstructed plan of the Early Archaic temple of Artemis Iphigenia at Aigeira in Achaia (see *figures 3, 15, 20, 28, 33, and 35* for comparisons).



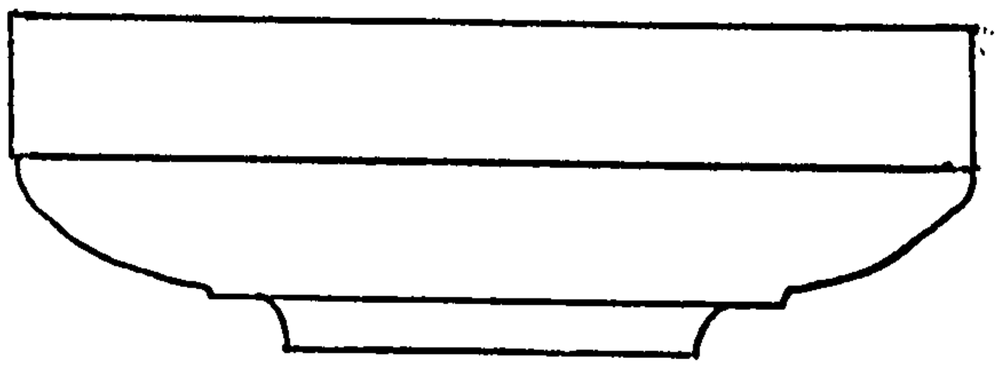
a. Argive Heraion. Doric capital 'C'.



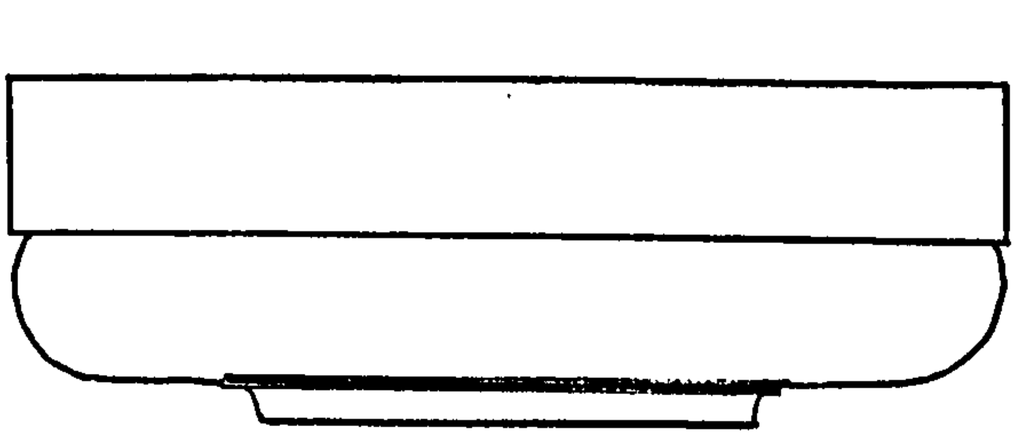
b. Argive Heraion. Doric capital 'D'.



c. Argive Heraion. Doric capital 'E'.

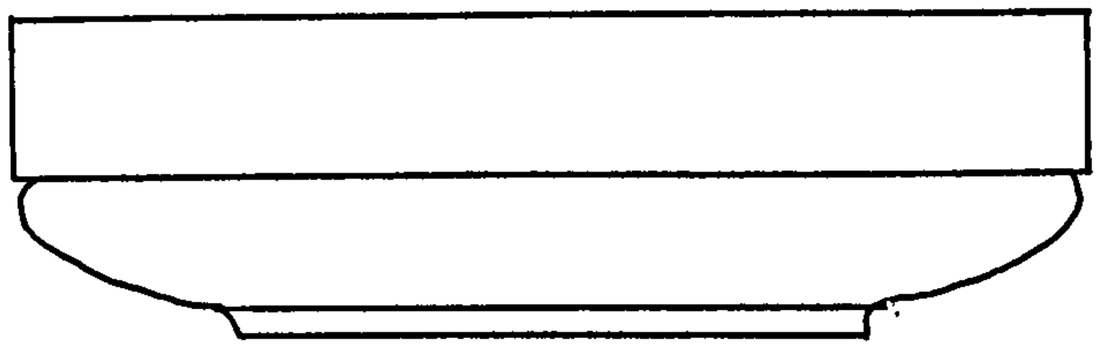


d. Tiryns. Doric capital.

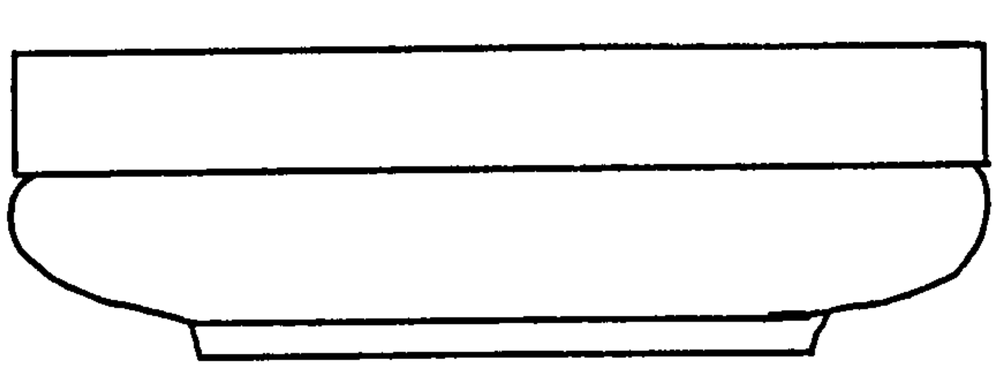


e. Troizen. Doric capital.

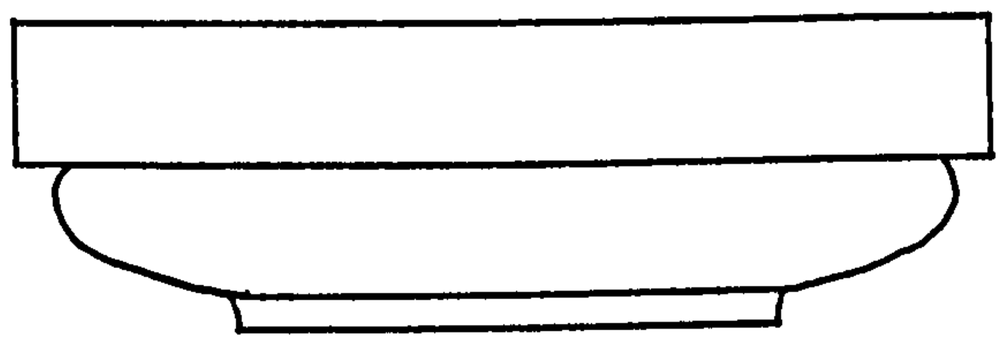
Figure 40 - Reconstructions of the Doric capitals from the Argolid.



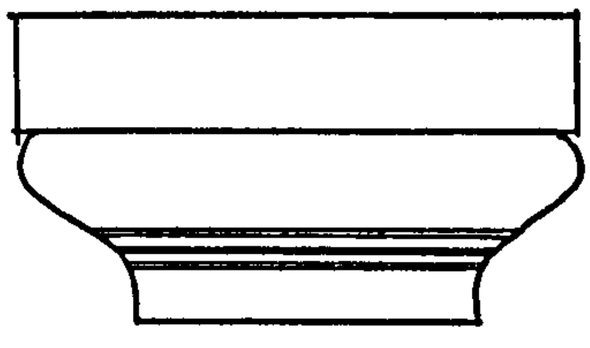
a. Olympia. Heraion. Doric capital 'N5'.



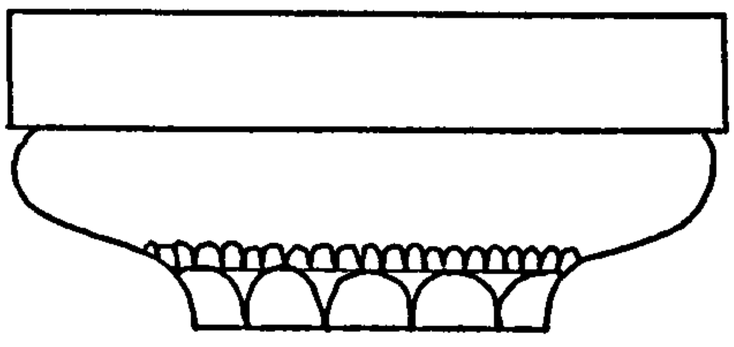
b. Olympia. Heraion. Doric capital 'N6'.



c. Olympia. Heraion. Doric capital 'N8'.

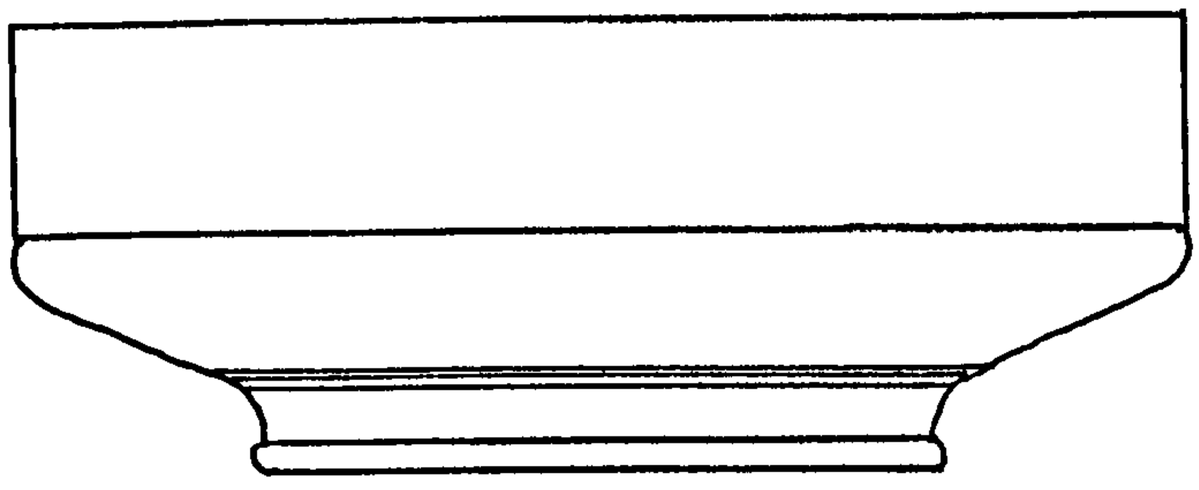


d. Kombothekra. Doric capital.

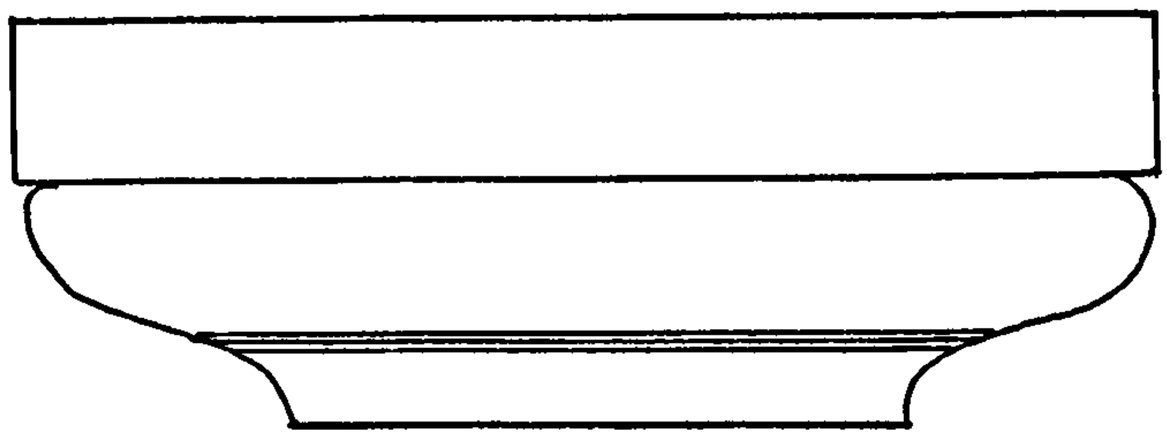


e. Mantinea. Doric capital.

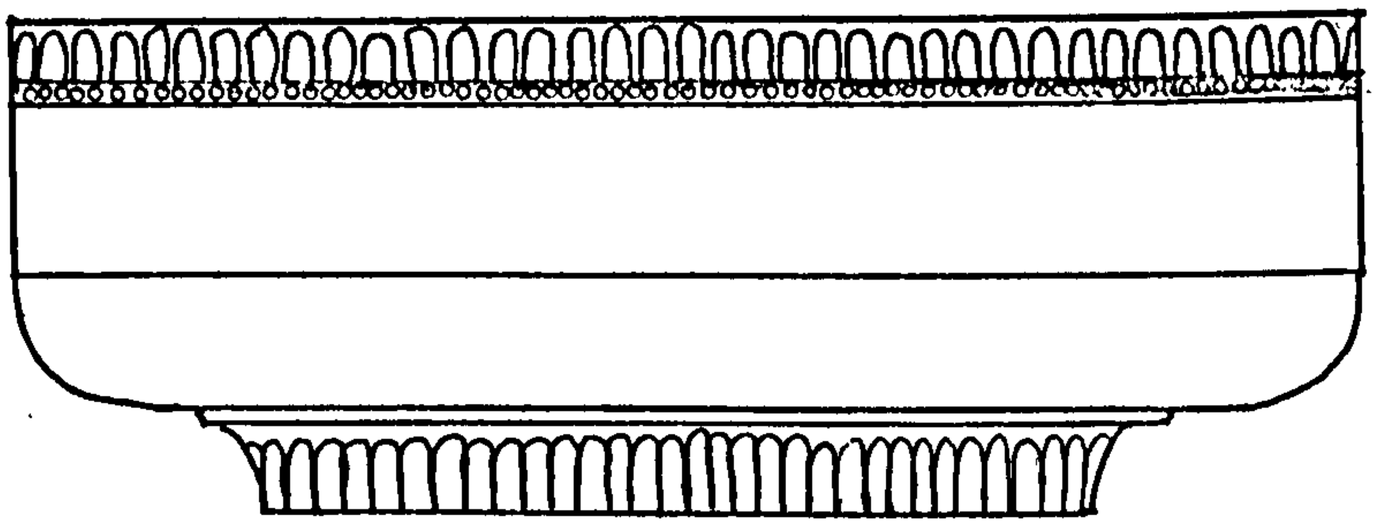
Figure 41 - Reconstructions of Doric capitals from Eleia and Arcadia.



a. Amyklaion. Doric capital.

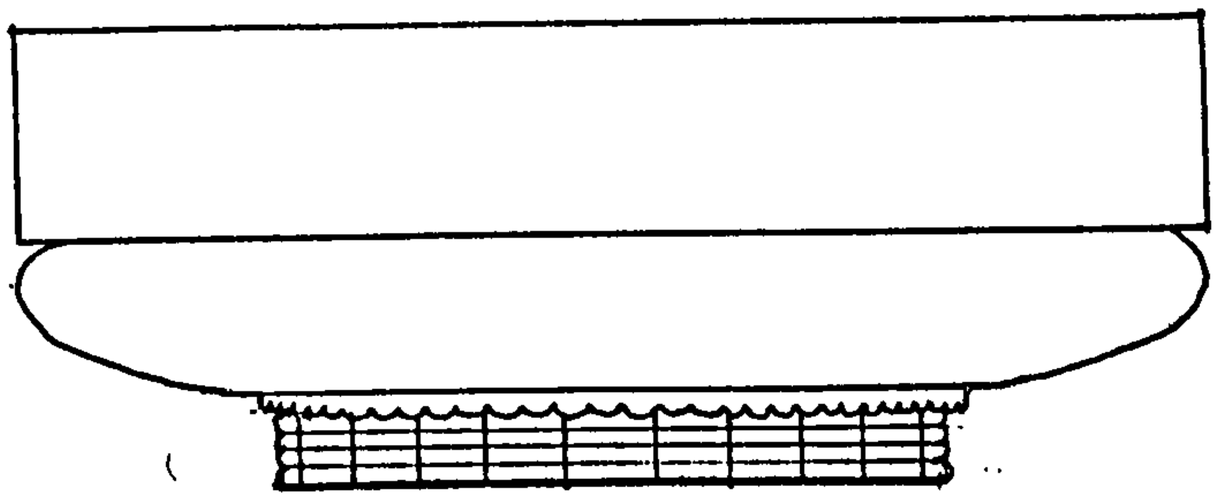


b. Artemis Orthia. Doric capital.

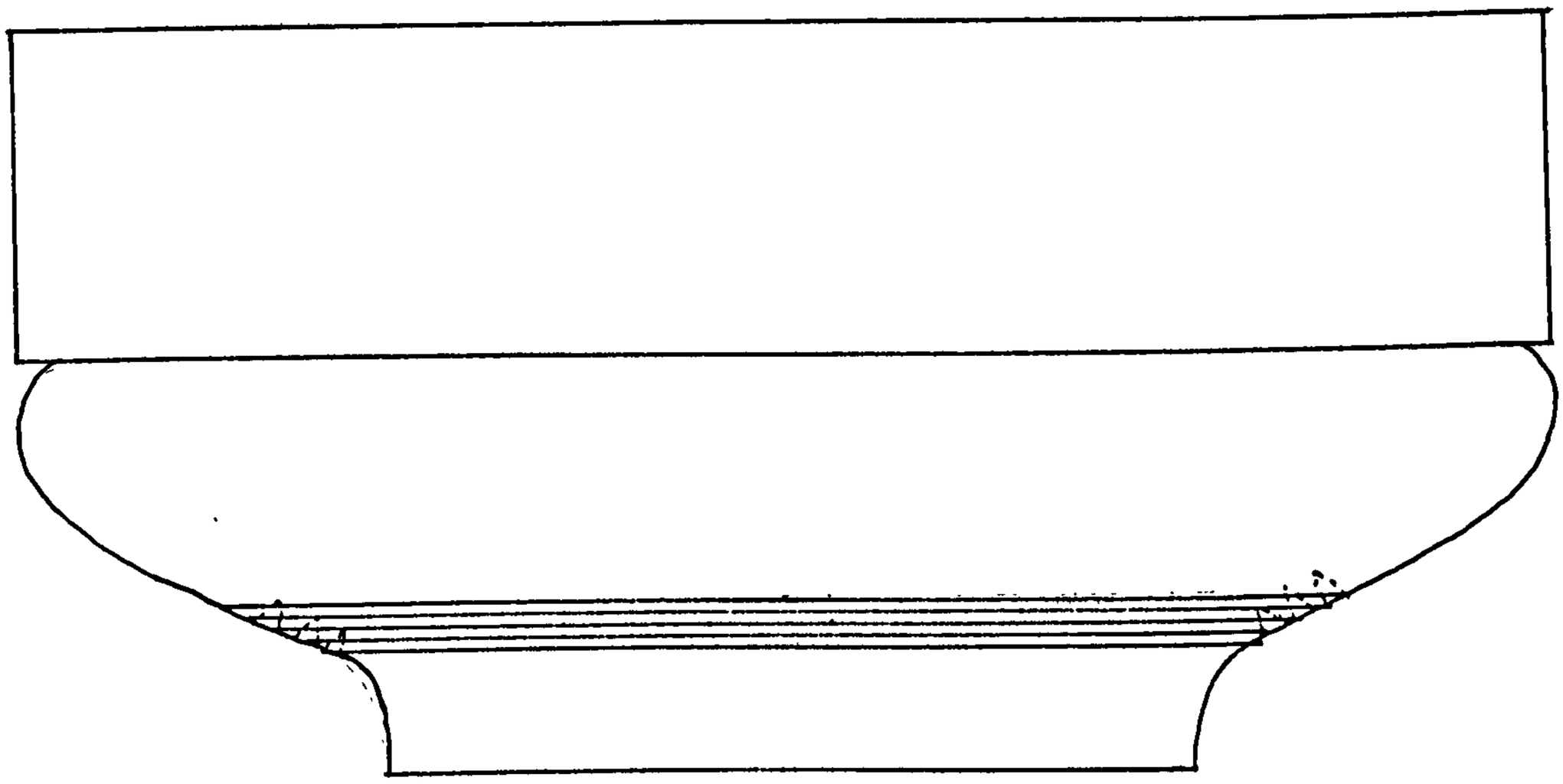


c. Longa. Doric capital.

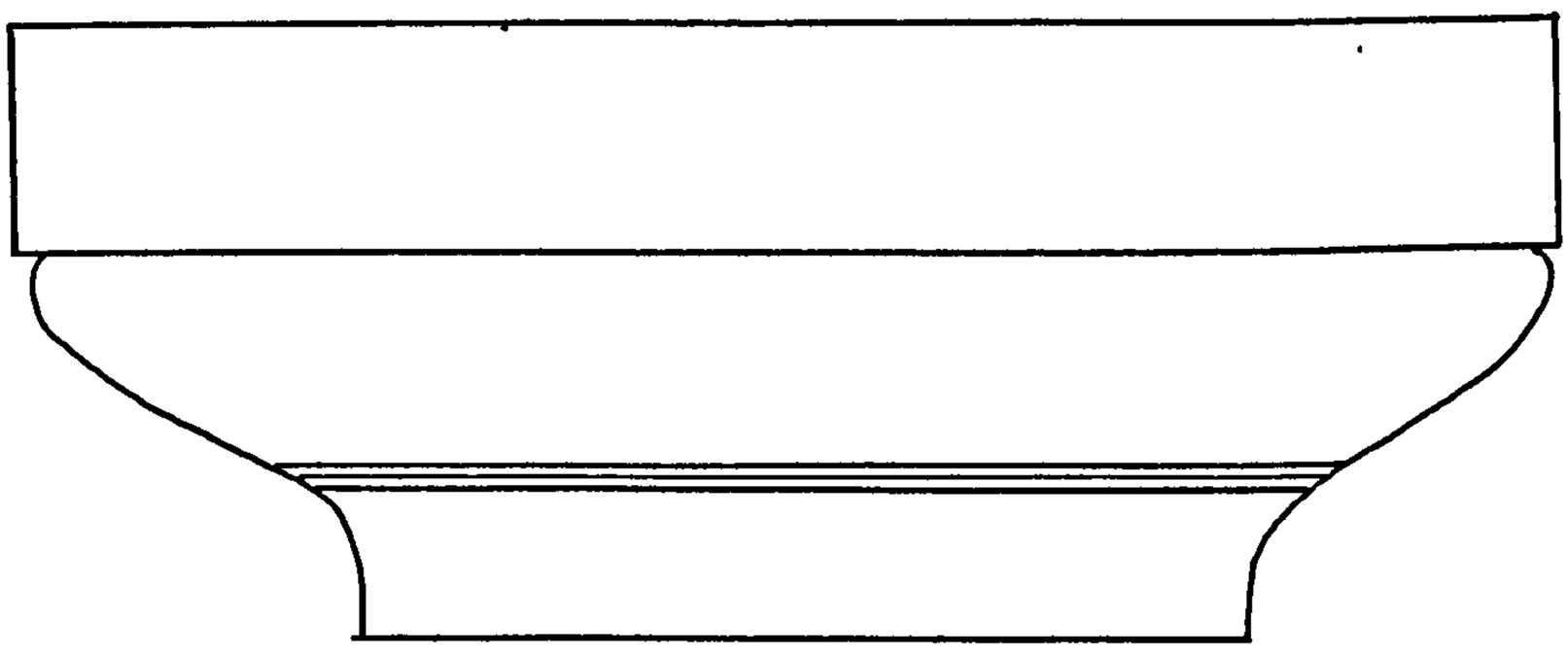
Figure 42 - Reconstructions of Archaic Doric capitals from Laconia and Messenia.



a. Corcyra. Temple of Artemis. Doric capital. *c.* 585 BC.



b. Syracuse. Temple of Apollo. Doric capital. *c.* 560 BC.



c. Corinth. Temple of Apollo. Doric capital from exterior colonnade. *c.* 540 BC.

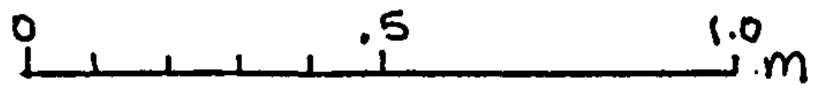
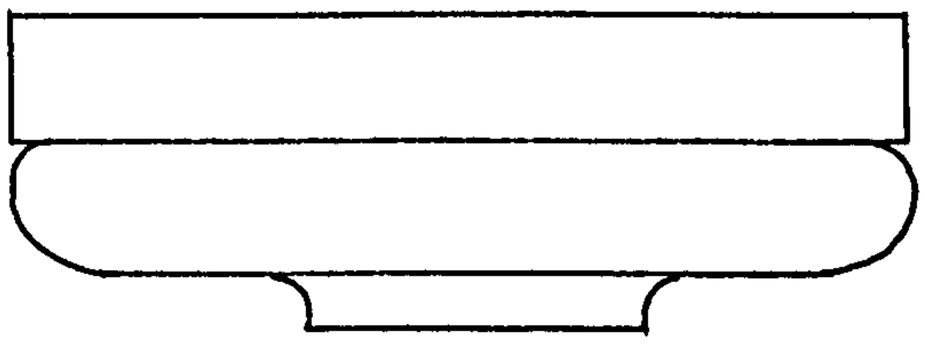
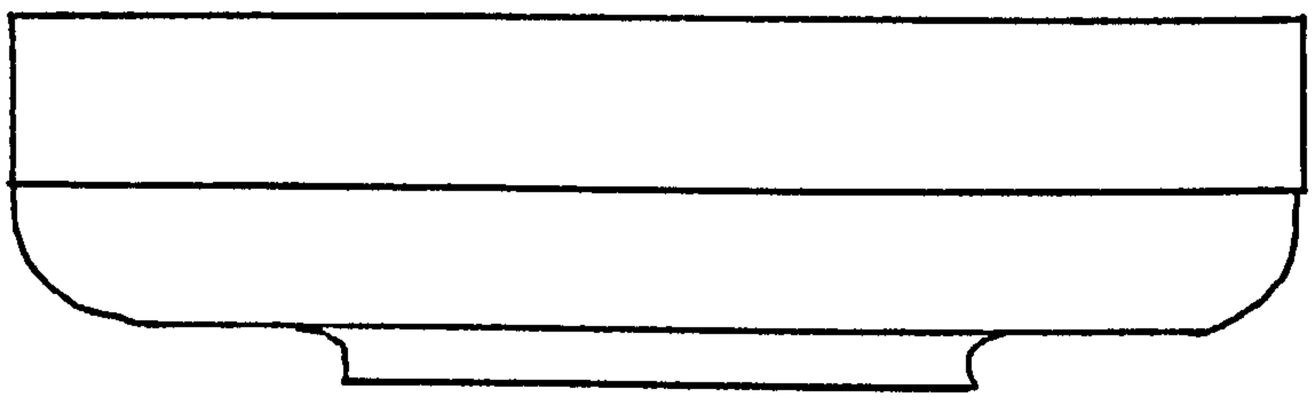


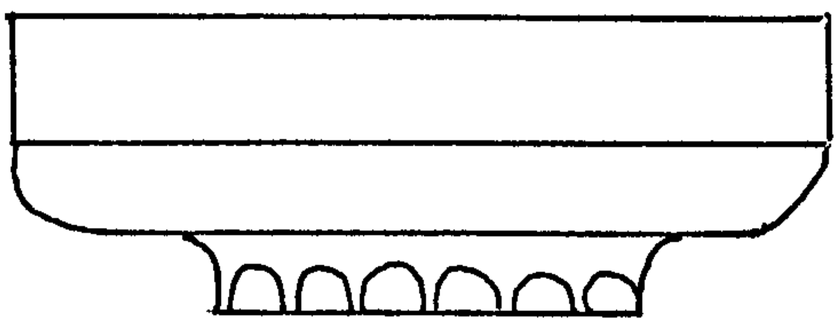
Figure 43 - Comparison of Archaic Doric capitals from Corinth and its colonies.



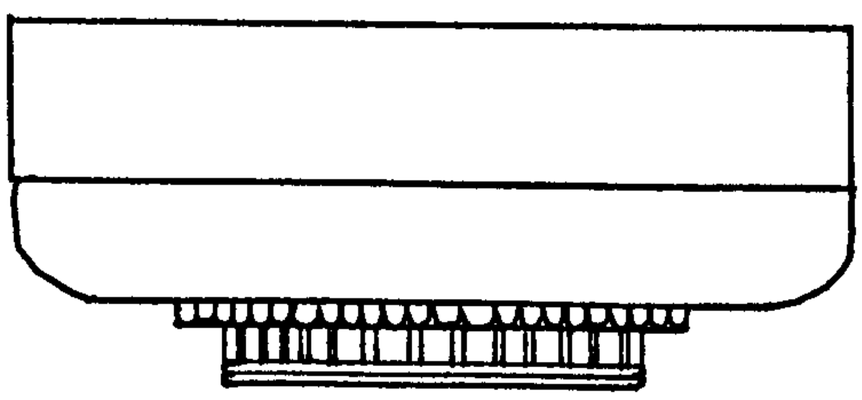
a. Delphi. Temple of Athena Marmaria. Doric capital.



b. Aegina. Early temple of Aphaia at Aegina. Doric capital.



c. Selinus. Temple of Demeter Malophoros. Doric capital.



d. Corcyra. Xenvares. Doric capital.

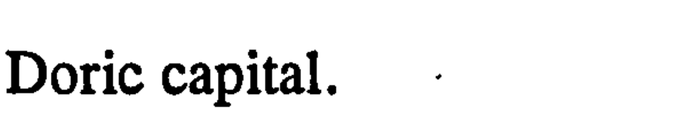
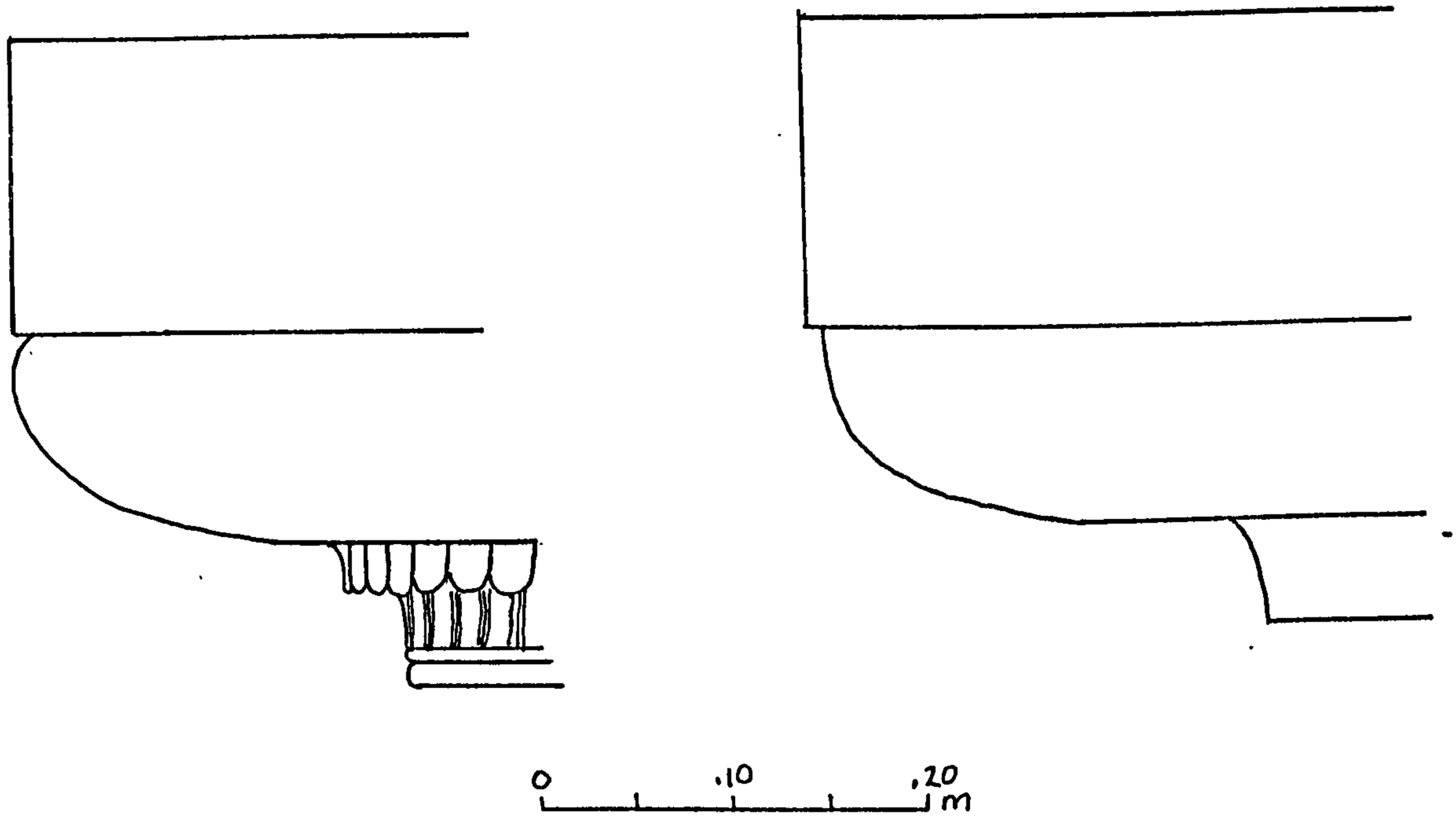
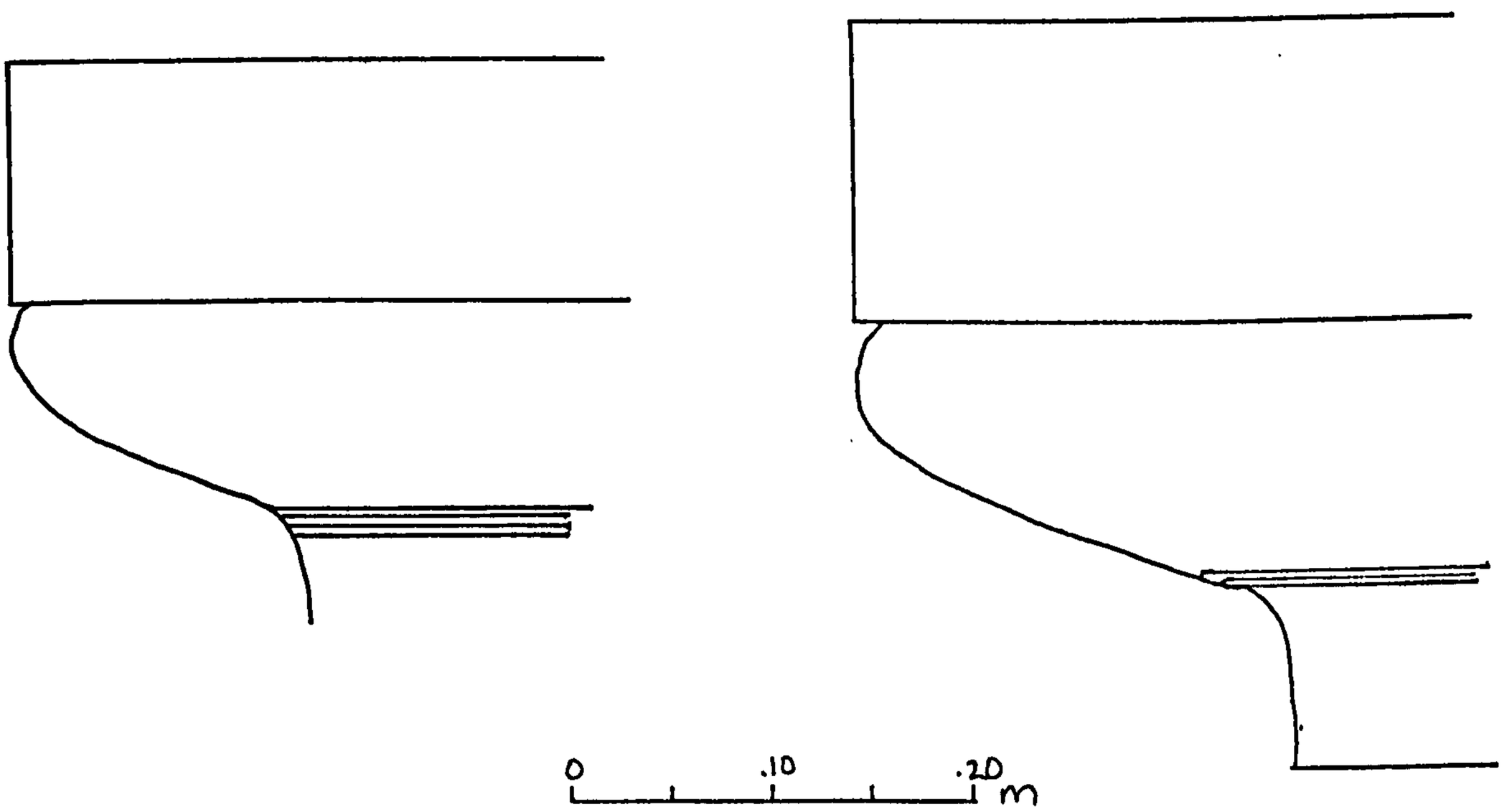


Figure 44 - Doric capitals from elsewhere in Greece and Magna Graecia.

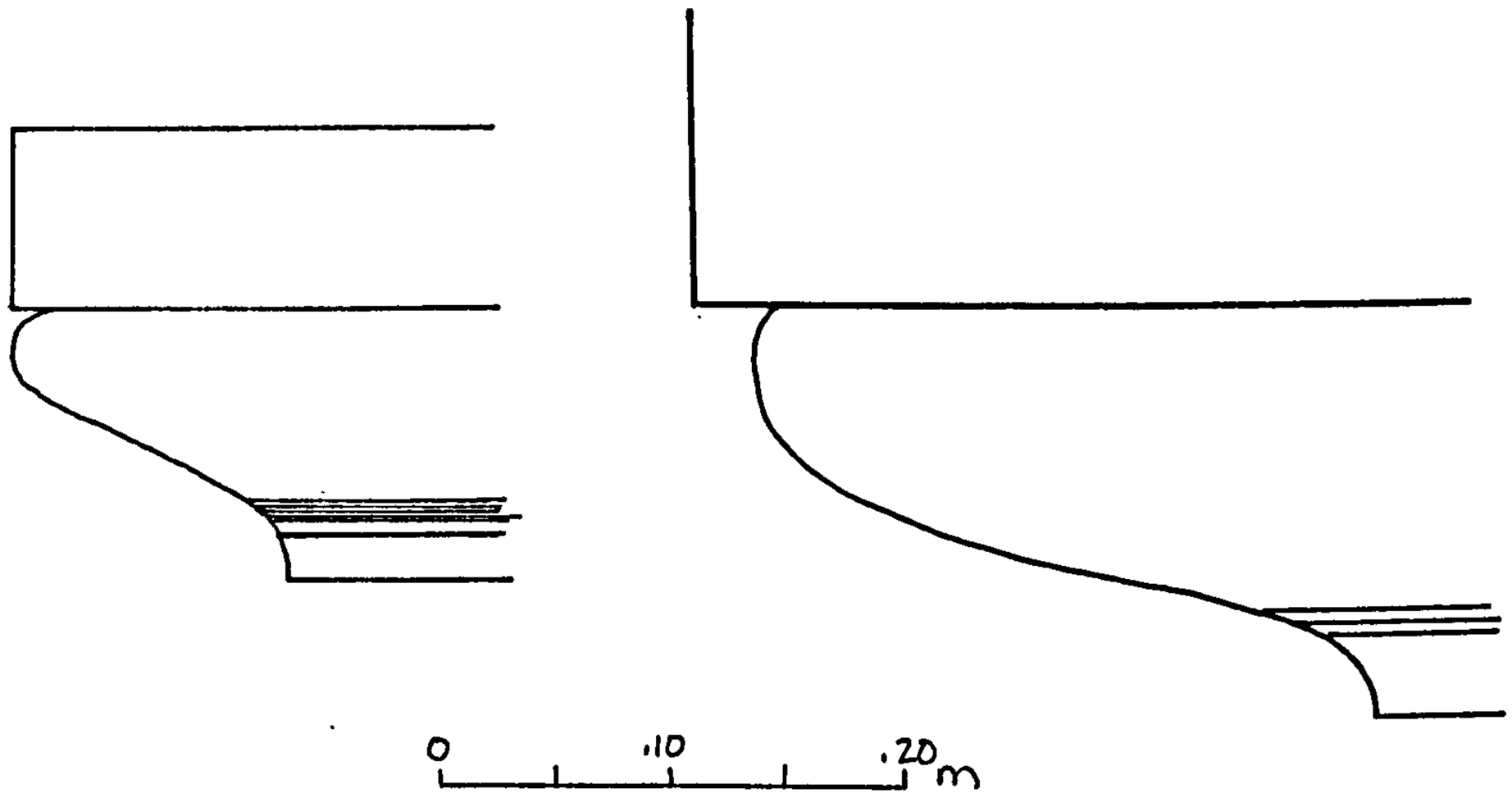


a. Comparison of Doric capitals from Corcyra (Xenvares) *c.* 600 BC and Argive Heraion ('C').

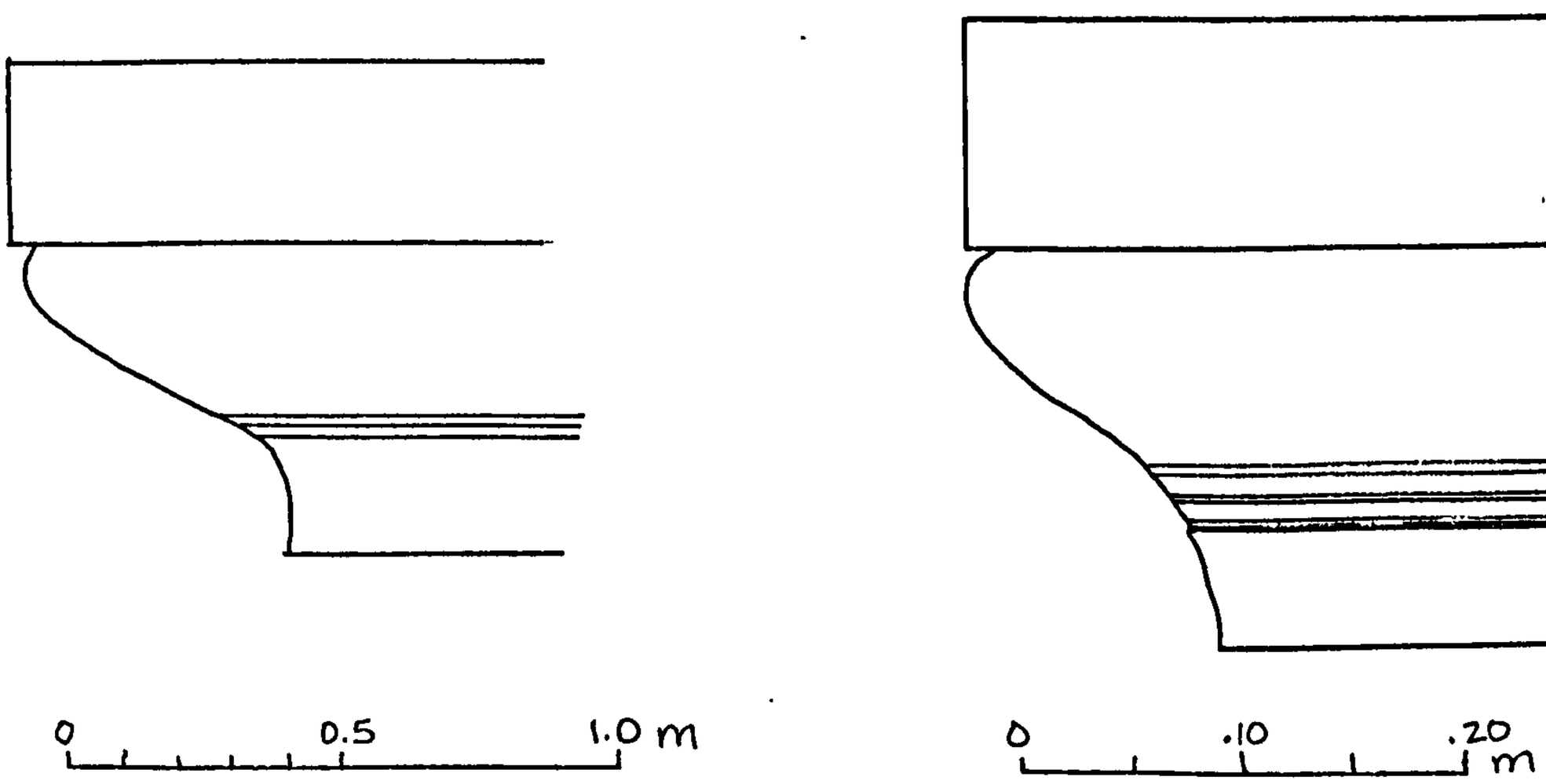


b. Comparison of Doric capitals from the Old Tholos at Delphi *c.* 580 and the Argive Heraion ('D').

Figure 45 - Profiles of Doric capitals.

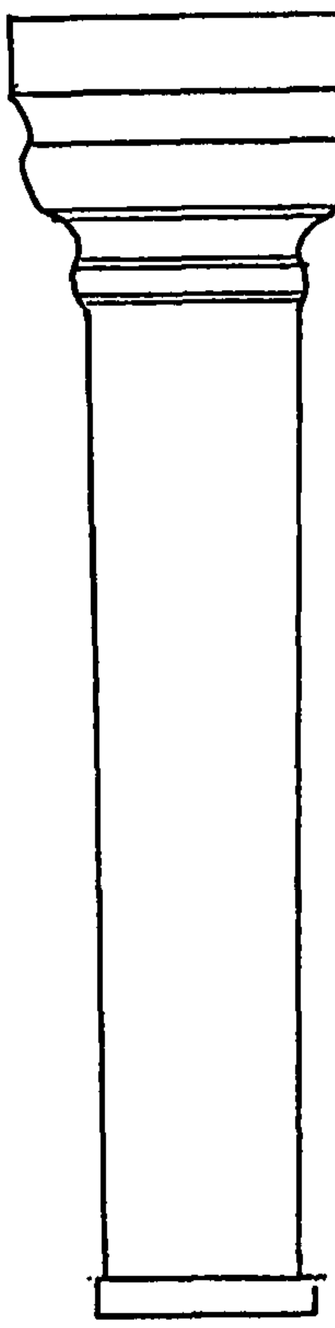


a. Comparison of Doric capitals from the Monopteros at Delphi *c.* 560 BC and the Artemis Orthia sanctuary at Sparta.

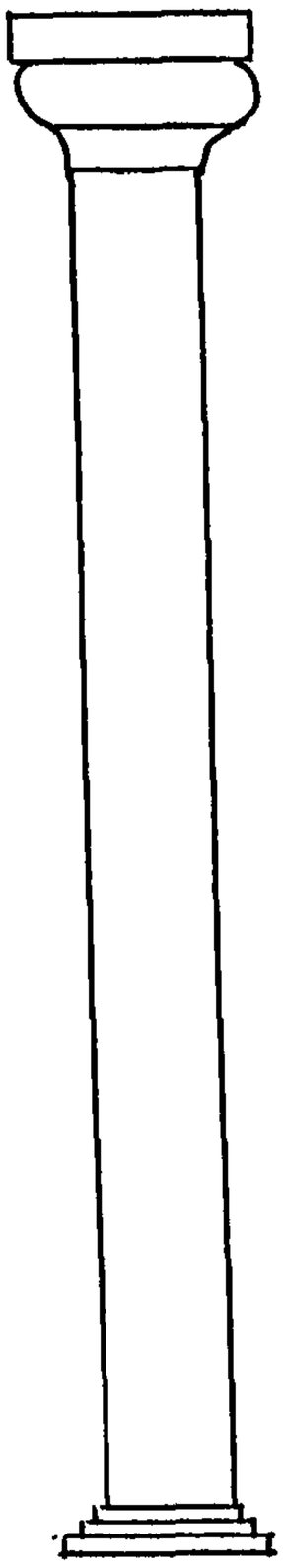


b. Comparison of the Doric capitals from the temple of Apollo at Corinth *c.* 540 BC and the temple of Artemis Limnatis at Kombothekra.

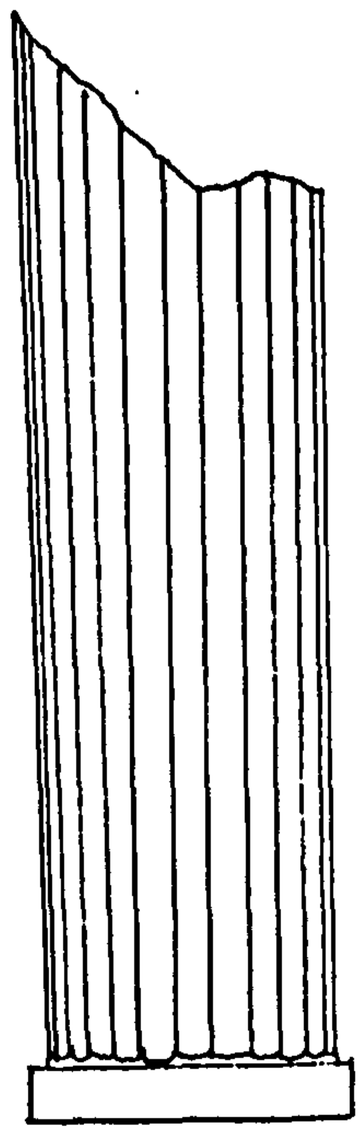
Figure 46 - Profiles of Doric capitals.



a. Column from the
Lion Gate at Mycenae.



b. Column from the
Treasury of Atreus
at Mycenae.



c. Column from theTomb of
Clytemnestra at Mycenae.

Figure 47 - Mycenaean columns.

Plate 1 - Corinth. Late Archaic temple of Apollo. View of the Late Archaic wall trench where there are possible cuttings from the Early Archaic temple.

Plate 2 - Isthmia. Early Archaic and Classical temples of Poseidon. General view of the temples from the west.

Plate 3 - Isthmia. Combination pan/cover tiles from the Early Archaic temple of Poseidon.

Plate 4 - Argive Heraion. View from the south of the Cyclopean masonry terrace for the Early Archaic temple of Hera.

Plate 5 - Argive Heraion. Early Archaic temple of Hera. View from the northwest of the stylobate with a drum that may have belonged to a column.

Plate 6 - Argive Heraion. Early Archaic temple of Hera. View from the southeast of the stylobate, column drum with U-shaped lifting holes, terrace paving, and possible cult statue base.

Plate 7 - Argive Heraion. Early Archaic temple of Hera. Stylobate block showing the dressed surface on the upper half of the blocks.

Plate 8 - Argive Heraion. Archaic Doric capital found in an Early Archaic stoa beneath the terrace for the Early Archaic temple.

Plate 9 - Tiryns. Early Archaic temple of Athena or Hera. View from the south towards the pronaos of the temple and earlier Mycenaean megaron. A Mycenaean column base reused in the temple is in the middle of the photo.

Plate 10 - Nemea. Early Archaic wall running beneath the floor of the adyton and stairs of the Classical temple of Zeus. View from the south.

Plate 11 - Nemea. Early Archaic temple of Zeus. Wall block with cuttings for timbers.

Plate 12 - Nemea. Early Archaic temple of Zeus. 'Ice-tong' lifting holes on the top of a building block.

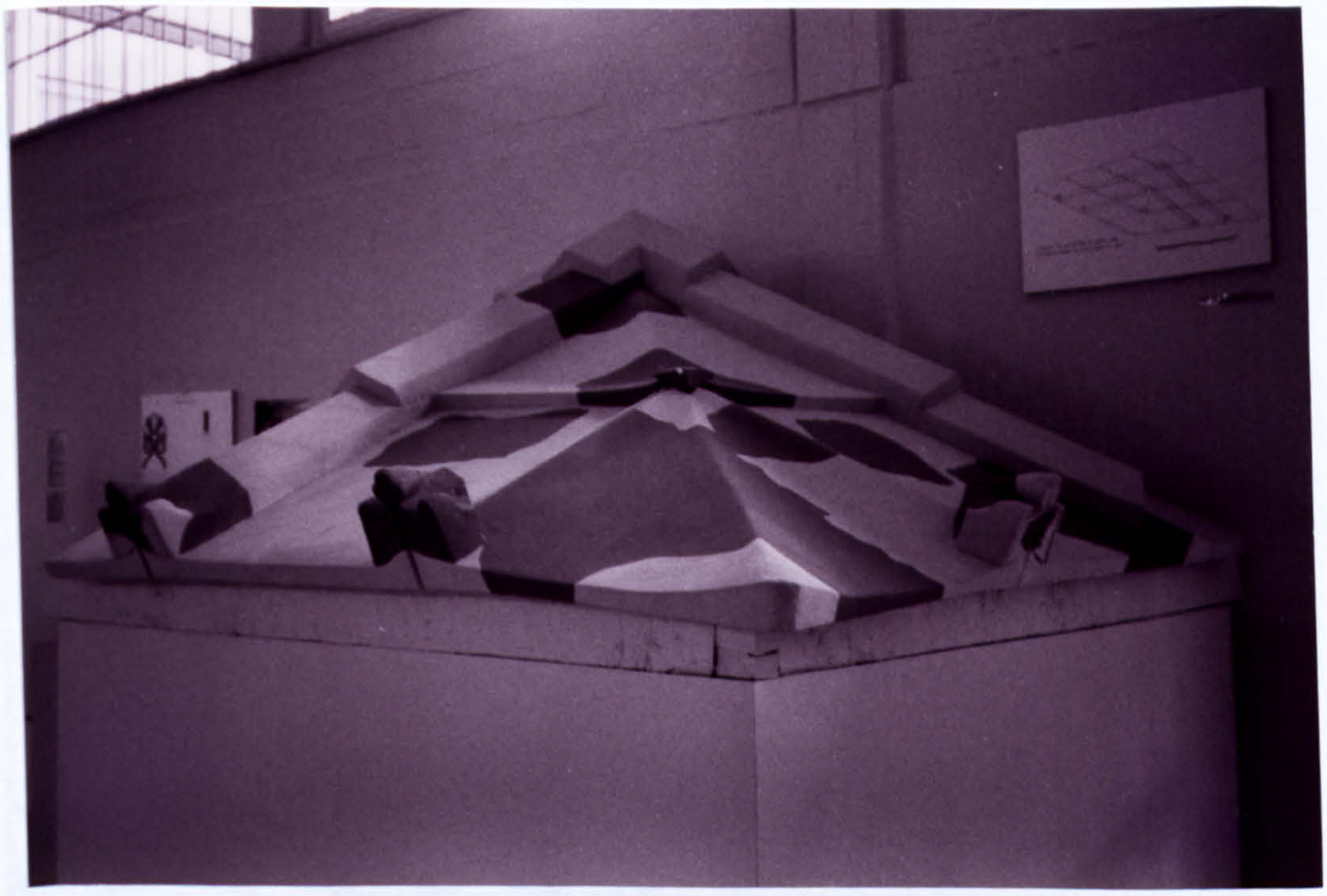


Plate 13 - Nemea. Early Archaic temple of Zeus. Restoration of the hipped roof.

Plate 14 - Nemea. Early Archaic temple of Zeus. Stamped three-peaked antefix.

Plate 15 - Nemea. Moulded three-peaked antefix.

Plate 16 - Alipheira. View of the Late Archaic temple of Athena.

Plate 17 - Bassae. Early Archaic temple of Apollo. View from north of the cella and the adyton.

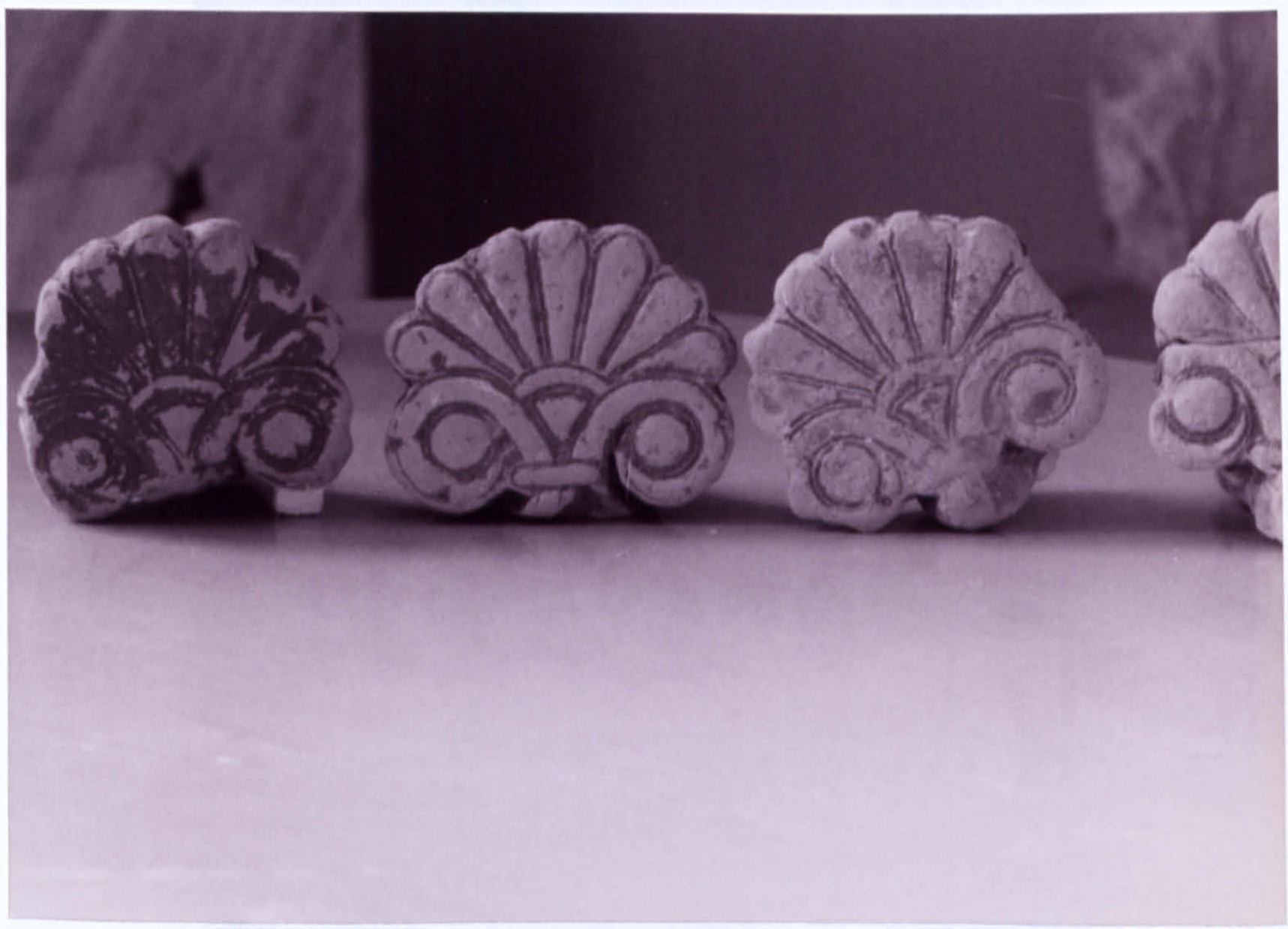


Plate 18 - Boreion. Early Archaic temple of Athena Soteira and Poseidon. Palmette finials from antefixes.

Plate 19 - Gortsouli. Early Archaic temple(s). Outer and inner foundation walls from the northwest corner.

Plate 20 - Kotilon. Early Archaic temple 'A'. View from east.

Plate 21 - Pallantion. Early Archaic temple 'C'. View from the east of two column bases and the statue base within the cella.

Plate 22 - Tegea. Early Archaic temple of Athena Alea. View from the east of the interior foundations and stylobate blocks for parallel colonnades lying within the Classical temple.

Plate 23 - Tegea. Early Archaic temple of Athena Alea. Marble stylobate blocks with cuttings for a column from the internal colonnade.

Plate 24 - Tegea. Early Archaic temple of Athena Alea. Marble toichobate blocks from the northwest corner of the temple showing the channels of anathyrosis for orthostates and a vertical pier.

Plate 25 - Menelaion. View from the east of the Late Archaic temple or shrine of Menelaos and Helen.

Plate 26 - Sparta. Second temple of Artemis Orthia. View from the southeast of the foundations for the Early Archaic temple.

Plate 27 - Sparta. Archaic temple of Athena Chalkioikos. View from the west of stone foundations for stylobate or walls. Remains of what appear to be mud-brick walls lie within the outer walls.

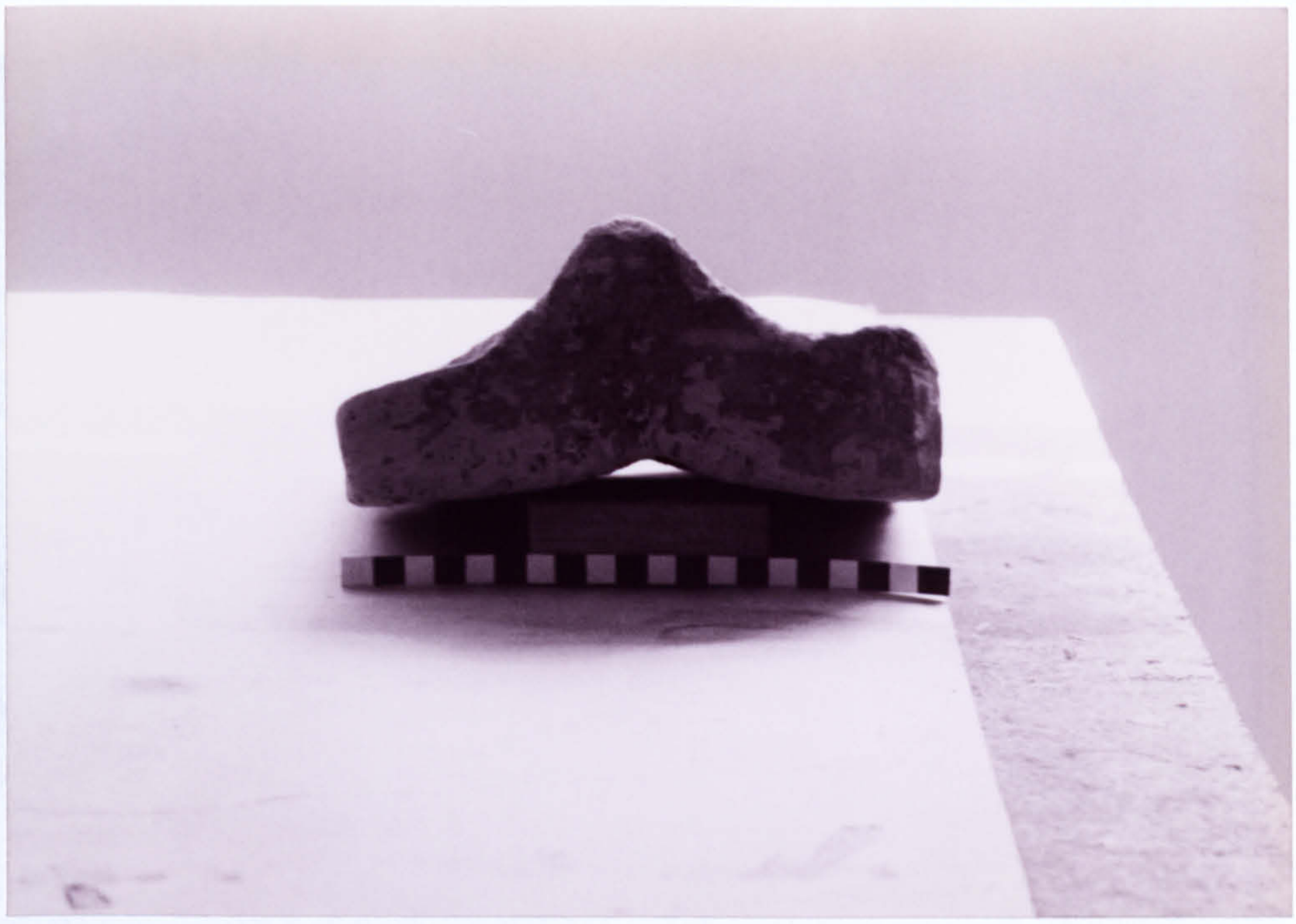


Plate 28 - Kombothekra. Early Archaic temple of Artemis Limnatis. Undecorated three-peaked antefix.

Plate 29 - Olympia. Heraion. View from the east.

Plate 30 - Olympia. Heraion. View from the east of the threshold and naos.

Plate 31 - Olympia. Heraion. Pronaos. View of the doorway and the anta in the pronaos.

Plate 32 - Olympia. Heraion. Anta of the opisthodomos.

Plate 33 - Olympia. Heraion. Interior of the cella wall showing where the wall pier originally projected. Anathyrosis on the underside of the original block is clearly visible as is the attempt to fill in the gap created by the anathyrosis after the block was cut back. The stylobate for the pier is in the forefront of the photo.

Plate 34 - Olympia. Heraion. An Archaic Doric capital from the interior colonnade of the temple.

Plate 35 - Olympia. Colossal head of a sphinx or of the cult statue of Hera from the Heraion.

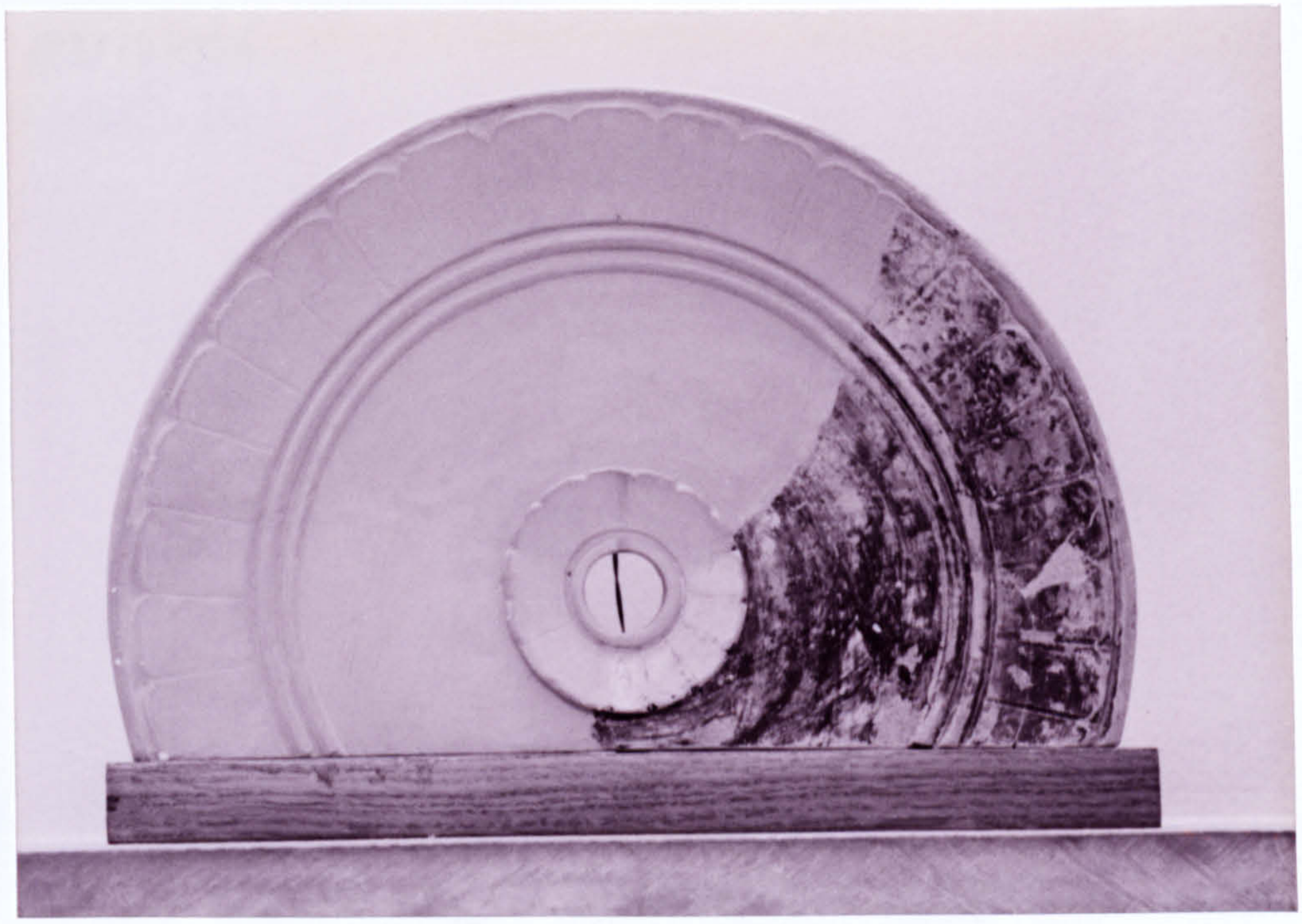


Plate 36 - Olympia. Heraion. Semicircular antefix.

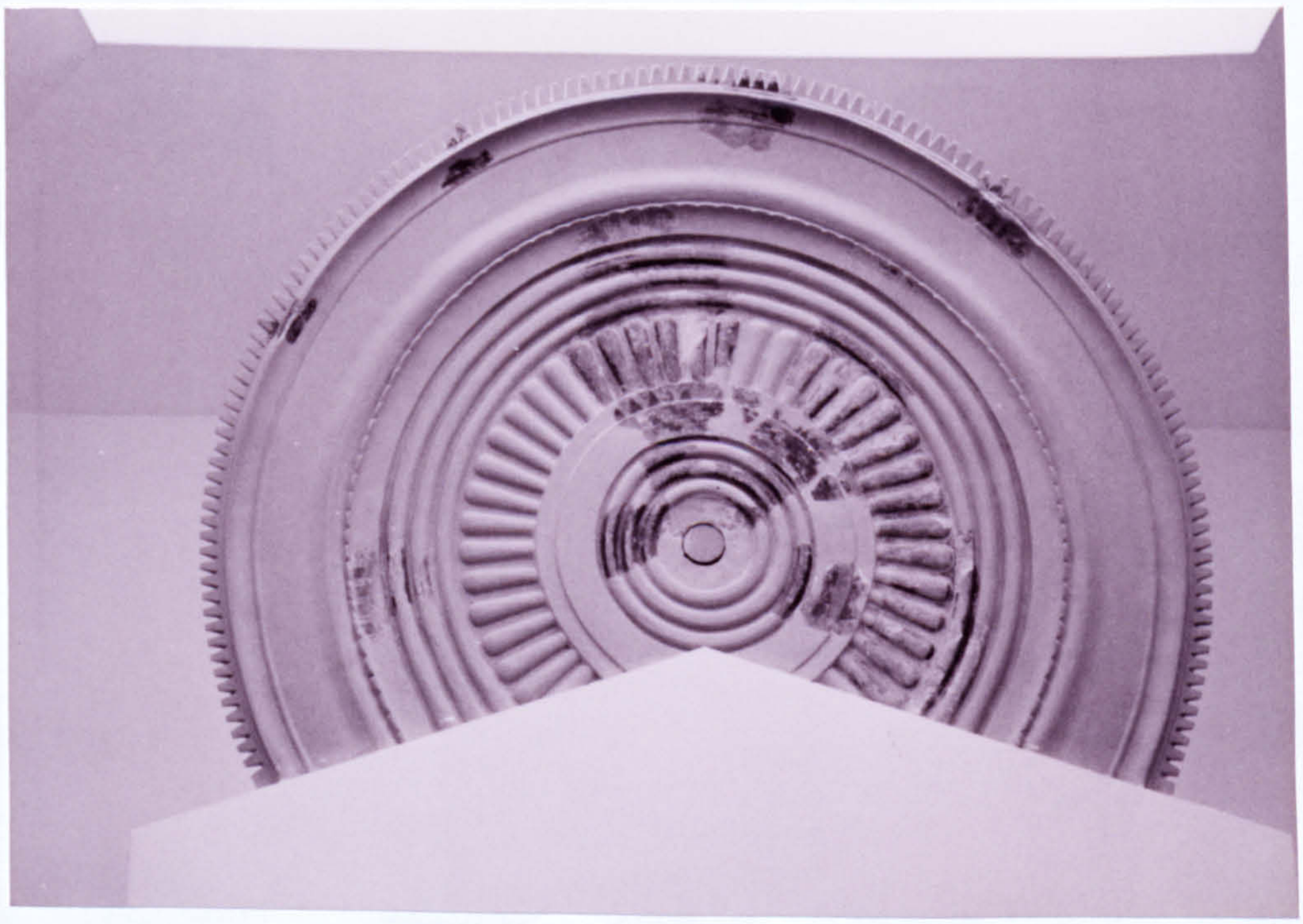


Plate 37 - Olympia. Heraion. Disc acroterion.